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*The Cellulose Age*

# Pulp & Paper

INDUSTRY



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## The Future Plywood--A Wood Pulp Base Plastic?

(An Editorial)

WE have seen on the Pacific Coast in these war years a phenomenal expansion of the plywood industry.

This is an important industrial development and many chemical, heating equipment and other supply companies are quite naturally showing a keen interest, to use a rather hackneyed phrase.

And yet, some of the technicians and other experts who are closely connected with this development, tell us that plywood is not the ultimate achievement in making a cheap and efficient chemical board.

They predict that an improvement on plywood will be a board made out of wood pulp with orthodox paper-making processes and combined with a plastic glue.

Sober and experienced heads in the pulp and paper industry do not find any fault with this prediction; they are happy to hear it.

They know that the large peeler logs required for plywood, the necessarily high grade logs, are not as plentiful as the kind of wood that can be used in pulping processes. If plywood becomes much more popular, the peeler logs might even become scarce.

They know making plywood in batches and not by a continuous process, as pulp is made, is costly and relatively uneconomic.

But—they also know they know the road to a cheap wallboard and sheathing material made out of a plastic wood pulp is still a long one. However, by diligently pursuing the prime objective of all progressive woods industries—the closer utilization of forest resources and the utilization of good wood that today is going to waste in the forests and in saw-mills and plywood mills and even pulp and paper mills—the development of such a plastic wood pulp is assured.

An interesting war-born industry has developed in River Rouge, Mich., where the Detroit Wax Paper Company, 1721 Pleasant Ave., has pioneered the production of a wood pulp base impregnated with plastic and plastic paper combinations as prime engineering and structural materials for plastic manufacturers. It is making sheet stocks which are run through a phenol formaldehyde liquid resin.

It is well known that wood pulp, molded with glue under pressure, produces aircraft parts as strong as metal. An important development in this direction has been recorded in St. Louis, as well as by factories in other parts of the country.

But the hard cold fact is that the wood pulp plastic products that might be compared with plywood are still running into higher costs.

At the recent Society of the Plastic Industry meeting in New York, it was pointed out that the most important advances in the plastic field have not been in the discovery of brand new materials but in the increased knowledge of how to use present materials—wood pulp, for example. And yet what might be described as a new industrial raw material is being made out of wood, opening wide horizons for the pulp and paper industry.

The growth of the plastic industry itself, incidentally, is noteworthy. Its 1943 sales volume is estimated at \$500,000,000, including raw materials, the machines that do the work and the products.

In connection with processes of impregnating cheaper grades of paper with phenol formaldehyde and urea resins to make them strong and waterproof, now an almost common practice, it is claimed that less than one ton of resin will replace 16 tons of expensive sulphite wood pulp.

There is no doubt that in plastics developments, there is a big field for paper specialties. The resin suppliers, barring some well known exceptions, have been slow to get into this field with the pulp and paper producers.

★ ★ ★

While dozens of kinds of plastics have been battling for popular acceptance, the Hercules Powder company points out in one of its publications that two well-established plastic materials accounted for 45.3 per cent of the dollar volume of business in the industry in 1939. These are cellulose acetate plastics, 25.6 per cent, and nitrocellulose plastics, 19.7 per cent. An increasingly large percentage of both cellulose acetate and nitrocellulose is made out of high quality dissolving wood pulp produced on the Pacific Coast.



## Paper and Paperboard Container Industry Was Prepared

(Editorial)

**T**HE problem of feeding our armed forces throughout the world could never have been met had it not been for the pulp and paper industry. The needs of the armed forces for paperboard cases to ship food, ammunition, clothing, equipment and supplies overseas were so imperative that they "literally telescoped 20 years of research into 20 weeks."

Heavy, bulky wooden and metal cases were largely used in World War I. It is fortunate that between wars domestic demand increased production of paperboard cases from pulpwood seven to eightfold, making it possible for the industry to meet the war shipping problem. Shipping space is at such a premium in this war that the stream of supplies would have been drastically reduced without containers made from pulpwood.

The ordinary cardboard cartons you see in your grocery store wouldn't do. Overseas shipping containers had to withstand severe tests—the extreme temperatures of Iceland warehouses, the sultry supply dumps of New Guinea, the heat of the African desert and the tropical moisture of the Solomons. Handling problems, too, were different on New York, Seattle and San

Francisco docks and at beach heads on enemy-held islands. In the new invasion technique small barges dump supplies—everything—into the surf to be picked up later when the landing force has been established. Containers, therefore, must be "surf-tested" to protect their contents for 24 hours or more, in heavy seas and still hold together, and must be able to protect their contents from tropical insects.

Even the ordinary grocery store bag plays its part in the war. Twenty millions of them were used for lunches in training maneuvers in the South last year. Millions are used as protective packaging for small machine parts.

Then there are the army's field rations or K-Rations—concentrated foods for use in emergencies when troops are cut off from support or on long marches without army kitchens. These rations are packed in paper containers.

The paper and paperboard container branch of the industry deserves the gratitude of the nation for research and development it carried on before this war, as well as since the war began.

## Pulp and Pulpwood on the Other Side of the Pacific

**T**HE key position of western United States, western Canada and Alaska in future world affairs has been heralded by the development of new seaports and of new airways and highways under the powerful impetus of military defensive and offensive activity.

If the promise of a great development of commerce over the North Pacific comes true after the war, as a result of this wartime development, it may bring new and important outlets for the Pacific pulp and paper industry. One of the moot questions is what would we buy from Russia and the Oriental nations in order to keep a healthy balanced flow of trade both ways.

One highly placed individual in the pulp and paper industry speculates on the possibility that a new source of pulpwood for Washington, Oregon and British Columbia mills may be in the forests of Siberia.

This also was mentioned by a Russian Commissar in a talk with Wendell Willkie in his round-the-world tour.

In the eastern newspapers it was reported last month that two shiploads of pulpwood (lend-lease) from Russia arrived on the Atlantic coast for eastern United States paper mills. Before the war a considerable amount of Russian pulpwood was shipped into the United States.

That now much-discussed book by "One Man" entitled "One World" makes two different mentions of the pulp and paper situation in Asia—one concerning China and the other, Siberia. As we read the book, it was a pleasant surprise find this interest on the part of Mr. Willkie in pulp and paper production.

### Views of a Commissar

● In his amusing and instructive chapter on his visit to the faraway Soviet Republic of Yakutsk, Mr. Willkie quoted Commissar Muratov (a character who seemed to have many of the attributes of an aggressive, live-wire American business man) as follows:

"We'll get nearly four million cubic metres of wood this year, against 35,000 in 1911. And we've still got a long way to go before we hit the annual growth, which

is 88 million c.m. After the war is over you in America are going to need wood and wood pulp, and we're going to need machines, all kinds of machines. We're not so far away from you as soon as we get the Arctic sea route open. Come and get it. We'll be glad to swap."

In another chapter dealing with his observations in China, Mr. Willkie told of the difficulties the Chinese are having in fighting to transplant and foster industries in the hinterlands, now that the former industrial centers are in Jap hands. The primitive stage of Chinese industry is revealed, but Mr. Willkie pays high tribute to the Chinese determination to develop an industrial balance to their nation.

He was shown a little paper mill, removed to the interior in Chungkiang in 1938, and says:

"The mill was about to begin the manufacture of banknote paper. Its present capacity is from five to nine tons of such paper a day, and the comparison of that figure with the needs of 100,000,000 people living in Free China was illustration enough of the grave problem China faces in trying to build a new economic base in the middle of the War."

It is inevitable that there will be greater production of pulp and paper in Russia, and probably in China.

### Canadian Writer's Comment

● Dwight L. Moody, an experienced financial newspaperman of Montreal, Canada, wrote recently:

"A possible future competitor (of Canada, in newsprint) is Russia, which in the past has shipped no pulp and paper to this continent, but which may conceivably do so from its vast timber stands."

All the way around the Pacific Rim, we may anticipate greater industrialization—whether it comes slowly, or in a rush, probably with American capital. Our U. S. Forest Service is assisting Chile to determine whether it would be practical in that country to develop a pulp and paper industry.

Inquiries and letters this magazine has received from government officials in New Zealand reveal extensive



plans to build new mills there and to enlarge existing mills.

Several years of wartime restriction has reduced supplies of paper to such low levels that there will be need for a lot of postwar production to catch up. But, more important, is the evidence of a permanent increase in the uses of pulp and paper—in new paper products superior to the items for which they substituted and in rayon and plastics.

## Dean Dunn and Dr. Friedman Praise U. of Washington Research Program

Two Oregon State College officials, who are active in the work of that institution in seeking new uses and more efficient uses of forest resources, congratulated the Washington State pulp and paper industry and the University of Washington on their cooperative research venture to find ways of utilizing or disposing of mill effluent.

Their messages, addressed to PACIFIC PULP & PAPER INDUSTRY, follow:

**PAUL M. DUNN,**  
Dean, School of Forestry, and  
Director, Oregon Forest Products Laboratory:

"I have noted with extreme interest the cooperative agreement between the University of Washington and the pulp and paper mills of that state. The mills are to be commended for their very forward thinking and the University is certainly to be congratulated. This program will be far reaching in its possibilities and the results will extend throughout the Northwest. The project is in very capable hands and I am certain that the foresight of the Industry group will bear ample fruit. It is a sensible approach to a major problem.

"In my opinion all State institutions have a responsi-

Some industry executives tell us they think the market will be big enough for Russians, Swedes, Finns and even Patagonians, if they are interested, and still allow for extensive expansion of industries in the United States and Canada. This is believed to be particularly true in the kraft field.

However, this war will not really be won unless it brings more stability and an end to dumping and cut-throat tactics in the world markets.

bility in regard to matters affecting industry. I am happy to see the mills take advantage of the technical knowledge located at the University."

**LEO FRIEDMAN,**  
Assistant Professor, Chemistry, and  
Assistant Director, Oregon Forest  
Products Laboratory:

"The University of Washington and the Pulp and Paper Industry of that state are to be congratulated on the agreement recently reached to carry out a comprehensive waste liquor research program at the University.

"For many years the University of Washington has pioneered in such research, and at present it is admirably well staffed and equipped to undertake such a program. Those of us who are interested in wood utilization shall eagerly await reports of the progress we confidently expect from this cooperative project.

"This large scale support by Northwest industry of research at a state school marks a real step forward in the research of this region. As the Pacific Northwest continues to expand its industries, this may well serve as guide and model for future cooperation."

## Changes In WPB Set-Up

H. C. Boon, well known Wisconsin mill executive, has been made assistant director of the paper division, War Production Board. He is the principal aide to Rex Hovey, director.

Lyman A. Beeman, St. Regis Paper Company executive, who went to Washington recently as head of the paper division technical staff, now heads the new pulp production branch. This is one of five branches of the division, the others being coarse paper, fine paper, converted paper products and pulpwood production. Paperboard and pulp allocation continue as separate offices responsible to Harold Boeschenstein, head of the Forest Products Bureau, as is the paper division.

## Altick Joins Bundy At Philadelphia Mill

Bernard P. Altick, recently with the War Production Board as deputy director of the paperboard division, has returned to the Fibreboard Products Inc. organization as sales manager of the Federal Container Company in Philadelphia. He formerly served in Seattle, Portland, San Francisco and Los Angeles offices of Fibreboard.

Mr. Altick, his wife and two daughters have found a home in the same apartment house at Georgetown, Pa., where Robert Bundy and his wife and two children live. Mr. Bundy, formerly manager of the Fibreboard mill at Port Angeles is vice president and general manager of Federal Container Company.

## NEWS OF

## The Pacific Pulp & Paper Industry--

### 15 Years Ago

Formal organization of the new Pacific Section of TAPPI took place June 22 at the New Washington Hotel, Seattle, with R. G. McDonald, national secretary, conducting proceedings. C. R. P. Cash, Cascade Paper Co., Tacoma, was elected the first chairman. R. M. DeCew, Fibreboard Products Inc., Sumner, Wash., was elected vice chairman; Dr. H. K. Benson, University of Washington, secretary, and A. H. Hooker, Jr., Hooker Electrochemical Company, Tacoma, membership chairman.

James Whalen, pioneer of the pulp and paper industry in British Columbia and co-founder with his brothers of the Whalen Pulp & Paper Mills, now controlled by British Columbia Pulp & Paper Company, died June 5 at Duluth, Minn.

D. B. Davies, in charge of operations of the 135-ton bleached sulphite mill of Rainier Pulp & Paper Co., Shelton, Wash., toured eastern mills. A fourth digester was added at Shelton.

William Breitenbach, chemist, Grays Harbor Pulp & Paper Co., Hoquiam, Wash., visited Hammermill Paper Company mills in the east.

### 10 Years Ago

Maurice Phelps, technical director at Camas, Wash., became assistant to Frank A. Drumb, mill manager, Pacific Mills, Ltd., Ocean Falls, B. C.

About 100 attended the Pacific Coast pulp and paper mill superintendents convention in Portland, Ore., June 1 and 2. Papers were given by C. R. P. Cash and V. L. Tipka. Bob Heuer was chairman of the Pacific division of the superintendents.

The Schaffer Pulp Company, Tacoma, Wash., shut down during 1933, reopened during March.

United Kingdom and there the kraft board will be remanufactured into paper for other uses. All forms of pulp products are in short supply in Britain as a result of war conditions and maximum utilization is made of everything of that nature received from abroad.

New Zealand has also been short of

paper and has always had to import its requirements. Negotiations are now under way for the establishment of a pulp and paper mill there to utilize pine trees from a forest of 170,000 acres owned by New Zealand Forest Products, Ltd., which recently erected an insulating board mill.

# Postwar Talks Drew Record-Smashing TURNOUT for NEW YORK "PAPER WEEK"

Donald Nelson challenges industry to show "virility" *✓✓✓* Rex Hovey, head of Paper Division, WPB, warns that Army-Navy bids for products must be taken up "or else" *✓✓✓* George H. Mead predicts there will be greater necessity for industry participation in government after the war than now *✓✓✓* TAPPI stages its first all out session on plastics while coating and adhesives session draws many, showing postwar trends *✓✓✓* WPB will allow manufacture of more new mill machinery in second quarter of 1944 than was permitted in entire war period *✓✓✓* Opening of St. Regis and Southland mills called "bright spots" by David Graham of WPB *✓✓✓* Some personal notes and comments brought back from the "big week" of APPA and TAPPI in the editor's memo pads.

**M**ORE than 3,000 key men of the pulp and paper industry of the United States and about 100 Canadian guests converged upon a quarter-mile square area of New York City during February 13-17. It was "Paper Week" again in that famous few blocks of brick and concrete in the Grand Central station district.

At one end of this tiny but mighty important spot on the globe, the Waldorf Astoria was filled right up to its ornate towers with paper and pulp manufacturers and merchants and at the other end, the technicians, engineers and equipment men of TAPPI jam-packed the Commodore with its biggest convention crowd of more than a year. In between, overflows of both groups

were lodged in a dozen other well-known hotels.

Even in this day of directives from Washington, we will stick to our statement that the scene of "Paper Week" was a mighty important spot on the globe." Yes, even in the face of the very hard fact that, today, the men in Washington say what the mills will produce, how much they will produce, what they will sell it for and to whom they will sell it.

Why, in the face of this fact and with a global war going on, should the annual turnouts of the American Paper & Pulp Association and the Technical Association of the Pulp & Paper Industry have smashed all previous attendance records? Why meet at all, if they are just taking orders these days

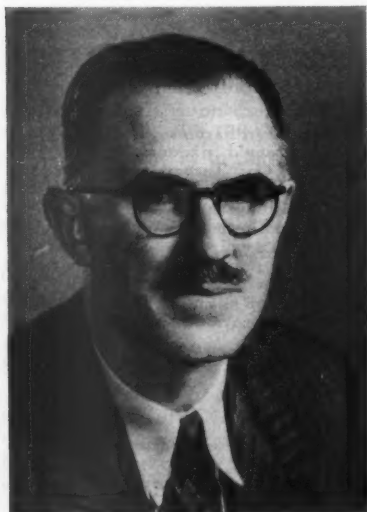
and not giving them?

The answer is this—while not letting up in fighting the war, the industry can at last see the flicker of the light of peace on the horizon. That flicker of light may mean the dawn of a great pulp and paper and cellulose age — an age that might very well become comparable with the wood, the bronze, the iron and the steel ages of the past. New processes, refinements, new products and new uses of pulp, paper and wood cellulose, spurred on by the necessities of war, were what brought a record-breaking TAPPI attendance of 1,200. (There were 2,100 at the Chicago meeting last fall, but that was a special Army-Navy conference, merely sponsored by TAPPI, and attended by paper users and many others outside the organization). Many off-the-record discussions of future relations of the industry toward government, the prospects for getting started this year back to a peacetime basis and the prospects of markets — these were the lively topics that drew nearly 2,000 manufacturers, merchants and equipment men to the Waldorf.

The weekly trade publications have already come out with a detailed and chronological report on the conventions. What we aim to do in this article is to interpret the trends and report on the significance of the sessions and some of their important highlights. And appended to this report is a collection of personal notes of interest.

The APPA heard appeals for more participation by industry in government, now and after the war. It heard ominous discussions of paper rationing and of possible countermanding of all products needed by the army and navy, resulting in drastic restriction of civilian supplies of paper and paperboard products.

TAPPI had its first all-out plas-



PACIFIC COAST MEN WHO PRESENTED FEATURED PAPERS AT the National meeting of the Technical Association of the Pulp and Paper Industry at the Hotel Commodore, New York City, on February 14 and 15:

(Left) ED P. WOOD, Technical Director, Pulp Division, Weyerhaeuser Timber Company, Longview, who on February 14 gave the paper "The Cupriethylene-diamine Viscosity Method as a Control in the Manufacture of Pulp of Specified Viscosity."

(Right) Dr. W. F. HOLZER, Central Technical Dept., Crown Zellerbach Corp., Camas, who on the next day presented "Limits of Acid Concentration-Digester Pressure Relations in Sulphite Pulping."

tics session with much attention given to laminates and paper base plastics. The popularity of the coatings and adhesives session testified to postwar plans in this direction and a trend toward more coatings being done on paper machines themselves. There was little attention given to new developments in closer utilization of wood and wood savings by new barkers and chippers — which was a disappointment to westerners. The first releases were made on the new peroxide bleaching processes for groundwood. The TAPPI gold medal was given to D. Clark Everest, president and general manager of Marathon Paper Mills.

### PAPER RATIONING?

● Donald Nelson, top man of the War Production Board, told the APPA: "We would not like to ration paper; I am sure that it will not be done."

But Rex W. Hovey, chief of the Paper Division of the WPB, came along a couple of days later and said: "The army and navy will get all the paper it wants even if it has to take it. That means civilian unessential supplies will be hit first, and then civilian essential supplies will be hit."

Mr. Hovey revealed that the army and navy are dissatisfied with the present governing provisions of WPB Order M-241 and that it may be revised to guarantee the filling of armed forces' needs. Simply because of negligence or lack of understanding, he said, "the paper industry is falling down on the job. Army advertisements for bids bring only two or three bids on 15 or 20 items."

The impression given was that the situation was really more ominous than Mr. Nelson indicated.

Mr. Nelson, in his address, conceded that a year ago the WPB unfortunately "took paper for granted, just as we do water and air." Now, he said, "there is hardly a commodity that compares with paper in essentiality." He challenged the industry to repeat "the demonstration of virility" hitherto shown by other industries in meeting war shortages.

Mr. Nelson conceded that the shutting down of western mills and the failure to halt the drift of labor from the woods, and mills early in the war were grievous government errors. But now he put it squarely up to the industry to pull the nation out of its critical predicament.

"You are in this position," he said, "probably because we took your industry for granted. We cannot carry on this country without paper. It is one of those things we must have."

Harold Boeschstein, who heads the WPB Forest Products Bureau, with Mr. Hovey as one of his appointees and aides, appeared at the opening APPA luncheon with Mr. Nelson. He said:

"There is an obligation on all of us to make the papers required. That is part of your job in this war. I do not want to moralize but I do want to point out that there is a small percentage we call morons—those who want to beat the game. They are like a rotten apple in the barrel. . . . It is false economy to quibble over details of expense when time is the essence of the problem."

At another point, he said, "I do not know of any industry that has taken hold

like this industry has since the fourth quarter of 1943." Indicating the mounting requirements, he said orders for V-boxes have increased 50 per cent this year while demands for waterproof paper jumped from 20,000 tons in the last quarter of 1943 to 150,000 tons in the first quarter of this year. Some observers guessed that even if the army and navy take paper production over, they will still have to go without plenty that they want.

### WANTS TECHNICIANS

● When Mr. Hovey spoke before the APPA and again at TAPPI's annual luncheon, he made a strong appeal for industry men and technicians to come to Washington and help in the war effort. He named specific jobs, such as in coarse paper and paper container divisions, that he wanted filled. Mr. Nelson and George H. Mead, retiring APPA president, made similar appeals and indicated that government agencies have been meeting with difficulties in drawing experts from industry.

End use data on products being sent to Washington by mills is proving very valuable in dealing with the WPB and



VANCE P. EDWARDES, Sulphite Superintendent of the Palmer, New York, mill of International Paper Company who was elected President of TAPPI. He is the first native of the Pacific Coast to be elected to this office.

army and probably will prove more valuable as time goes on, he said.

He announced as a new policy that paper production in any mill with a proper wood supply will not be halted or hindered, but mills will have to produce the kinds of paper that are needed.

There were indications that Mr. Hovey had been hearing criticism of Mr. Nelson, especially after Mr. Nelson's frank admission that WPB was wrong about paper a year ago.

"I don't agree that Mr. Nelson missed the boat last year," said Mr. Hovey. "He had to catch the aircraft boat, the aluminum boat, the copper boat, the shipbuilding boat and a lot of other boats first. He caught all the boats before anyone was hurt badly. The paper industry has not been hurt badly yet."

Although claiming that waste paper

collections had "turned the corner" with a 50,000-ton increase in January over December, Mr. Hovey admitted 66 per cent of paper production must be recovered to maintain present production. This seemed to verify the viewpoint often expressed in these columns that closer use of wood now being lost in production or left in forests will go much farther than waste paper collection can possibly go, in relieving the tight situation.

### PULPWOOD PROSPECTS

● Jimmy Madden, head of pulpwood production for the WPB, said "in retrospect we realize how serious a mistake it was to shut down the mills on the Pacific Coast in 1942" and "industry men who were in Washington last summer did an important job in changing that viewpoint."

He declared the Northeast states now have the "toughest labor situation." "The Pacific Northwest was the toughest area but it is beginning to ease up there now and we expect increased production there this year," he said.

Because of the improved situation in the Pacific Northwest, he held out hope that logging in that region will make it possible for the whole nation to bring its pulpwood receipts in 1944 to equal those of 1943, despite further military draft of manpower.

For western interests, perhaps the most important statement by Mr. Madden was:

"We are not considering allocations or equalizing of pulpwood supply and would not consider a return to such measures unless the situation is very much more serious."

He announced a new government form being sent to mills by which they are asked to estimate receipts of pulpwood in the next two quarters. He urged employers who could use war prisoners to bid for their services now, before agriculture competes for this labor. Incentive pay is permitted and has improved work done by prisoners, he said.

He estimated that only 16,176,000 cords of wood will be available in 1944 for United States consumption in pulp and paper mills, as compared with 18,700,000 cords in 1943. He counted in Canadian contributions. A half million cords were drawn from inventories last year. Unfortunately, he said, inventory depletions were mainly in the Northeast states, hitting that area hard, while practically none were made in the South.

He told operators to go to their regional representatives (for the Pacific Coast, Henry G. Champeaux, White Building, Seattle) for help before their problems "get too serious" and to "give him definite facts and figures to work with."

### PULP ALLOCATION

● David Graham, head of pulp allocation, defending the handling of these allocations by quota for different segments of the industry—a practice that has come in for some strong criticism—declared this was necessary "because every branch was trying to get as large a share as possible."

"The proper distribution could be made only by judging the relative importance of each segment," he said. "Segment quotas were decided upon by the Forest Products Bureau and the distribution in each segment was left to the pulp allocation office."

Pulp will not be withheld from integrated mills if it threatens to restrict their



production, he said. Allocations will afford as many mills as possible an opportunity to operate.

Mills may be required to make certain papers or paperboards with their pulp as needed, he warned. He cited cases which radically changed production to meet needs.

### ST. REGIS OPENING

● "The two bright spots in the 1944 picture," said Mr. Graham, "are the newly opened unbleached sulphate pulp mill of the Southland company at Lufkin, Texas, and the hopes we have of putting the St. Regis Paper Company's kraft division at Tacoma, Wash., in operation April 1." (This was one of three Puget Sound mills forced to close by WPB log controls in 1942.)

Mr. Graham later told this magazine that Southland is producing 3,000 tons a month of unbleached sulphate and that St. Regis in Tacoma will produce 7,000 to 8,000 tons a month, although its listed capacity is 9,000 and in the past it had production at one time approaching 12,000.

### MR. MEAD'S ADDRESS

● The final and most thought-provoking address of the TAPPI convention was by George H. Mead, president of The Mead Corporation, one of the big pulp and paper industries of the nation. It was similar in vein to his swan song speech to the APPA as its retiring president. He was introduced by retiring TAPPI president R. A. Hayward as the industry's "No. 1 Citizen" and at another time Mr. Mead and D. Clark Everest, president of Marathon Paper Mills, were described as "the two outstanding men of our industry."

Speaking from ten years experience of living and working in Washington for his government, first as a member of the overall NRA committee and now as a member of the National Labor Relations Board and on industry advisory committees, Mr. Mead predicted that "if the war

ended tomorrow, there would be more urgent and greater need of talent from industries in Washington than there is now."

"If democracy is to survive" and "if another destructive war is to be prevented after this one is over," he said "leaders and technicians of industry must cooperate and work alongside the political element of our government."

Admitting that NRA went "too fast" and "too far" in the direction of interference in business, he said today the reverse is true—the government going too far "in the other direction by preventing industry representatives from being heard by OPA and WPB."

He predicted that we must have universal military service hereafter in this country and must teach our children the history of the world. And, also to prepare ourselves to be a greater nation, he said, we must be ready and willing to learn from other peoples. He said "if Russia can do in the next ten years as much as she has in the past ten years, I hate to think of the competition we will face."

To the APPA he said: "The most important factor in the future success of our nation will be the government. I am as much opposed to government in business as any man, but I am convinced the only way to maintain the balance that every intelligent business man desires, is through understanding between leaders of both groups . . . the participation of industrial and business men with government in the last few years is in preparation for this new phase of our national life . . . the sooner we begin to use facilities provided by the department of commerce and other agencies, the better it will be for us and the country. . . ."

"The pulp and paper industry still is largely composed of smaller units, many with 'owner-management,' in close touch with the communities in which they operate. Great good can be done and invaluable service rendered the country if the members of this association are willing to accept this new philosophy and then bring to their communities an understanding of the problems."

### SWEDISH PULP ENVOY HONORED

● At Mr. Mead's right at the head table at the TAPPI luncheon was seated Costa Hall, of Stockholm, member of the Swedish Trade Commission which arrived in this country on a Red Cross boat. Mr. Costa said he wanted to find out what the United States wanted to sell Sweden after the war, but he naturally is primarily interested in finding pulp customers in this country and he said so. He was one of only a half dozen persons called upon to make a speech and his speech was a masterpiece of diplomacy.

It was clear that the Swedes are anxious to make the kind of pulp the American mills want and they will go to a lot of trouble to please their prospective customers. He said more Swedes will be coming over, as soon as they can get accommodations on boats.

He said there is "hardly a sulphite mill in Sweden today which hasn't an alcohol plant." The plants, of course, are subsidized as will be the new one to be built at Puget Sound Pulp & Timber Co., Bellingham, Wash. Shortage of grain crops made the alcohol plants at pulp mills necessary in Sweden, he said.

### SWEDES HAVE BIG PULP STOCKPILE

Costa Hall, representative of pulp producers in Sweden and member of a Swedish trade delegation, told a meeting of eastern paper mill executives recently in New York that Sweden has a stockpile of 400,000 tons of kraft and sulphite pulps. He indicated his country hoped to ship a large amount of this to United States mills as soon as possible.

It is understood the Swedes have built or engaged ships to make deliveries at the earliest possible date.

### TAPPI MEDAL 1944

● The sentimental high point of the TAPPI sessions was when Dr. Allen Abrams made the presentation of the 1944 TAPPI gold medal to D. Clark Everest, the popular head of Marathon Paper Mills. He is the first non-technical man to receive the medal.

In his speech, Mr. Everest himself indicated clearly why he got the medal in recalling three technical developments of importance that he participated in during his career:

1. His association with William H. Mason, a former medal winner, in developing masonite.
2. His sponsorship and association with the late Guy C. Howard, formerly of Everett, Wash., in developing the Howard process for utilization of waste liquor.
3. His encouragement and participation in development of paraffine, protective coatings and better packaging which, Mr. Everest predicted "will be the basis of many new products for post-war use."

Mr. Everest began his career as an office boy in a paper company in 1900, when he was forced to win the support of his mother and sister as well as himself. Promotion came fast to him because he was alert to the importance of technical work in the industry and was continually encouraging it. He himself made the remark that "the increase in paper products since 1915 has been in the exact ratio to the increase in the number of technicians."

### COAST NATIVE SON HEADS TAPPI

● Daniel K. Brown, president of Neenah Paper Co., Neenah, Wis., became the new president of APPA for 1944.

Among a number of vice presidents of APPA elected at the meeting (who constitute its executive committee) were: Roy K. Ferguson, president, St. Regis Paper Co.; R. A. McDonald, executive vice president, Crown Zellerbach Corp., and R. B. Wolf, manager, Pulp Division, Weyerhaeuser Timber Co.

The first native of the Pacific Coast ever to be elected president of TAPPI in its 29 years of existence took over leadership of that organization in the person of Vance P. Edwardes, who at present is the sulphite superintendent at International Paper Company's mill at Palmer, N. Y.

(Ray S. Hatch, research director, Pulp Division, Weyerhaeuser Timber Com-



GEORGE H. MEAD, President of Mead Corporation and member of the National War Labor Board, who made an inspirational speech winding up TAPPI sessions. Mr. Mead was introduced as "the No. 1 citizen of the pulp and paper industry."

pany, was the third president of TAPPI in 1919 and 1920, but that was long before he moved to Longview, Wash., and became a Pacific Coast habitue. Mr. Hatch, among several past presidents introduced at the annual luncheon, was mill manager at Hamersley Manuf. Co., Garfield, N. J., at the time he headed the group. The mill made wax and greaseproof papers.)

Mr. Edwardes gave the writer this brief history of his West Coast career: "I was born in San Francisco. From 1911 to 1915 I was employed at the old Crown Willamette mill at West Linn, Ore., where I became assistant chemist. For the next two years I was with the Bureau of Mines in Berkeley, Calif., and then followed seven years at the Forest Products Laboratory in Madison, Wis." The remainder of Mr. Edwardes' career was in the east except for a year in 1929 with the Northwestern Pulp & Paper Co. at Astoria, Ore.

"I still have a soft spot in my heart for the West," he said.

In line for the presidency of TAPPI in 1945 is Gunnar W. E. Nicholson of Union Bag & Paper Corp., Savannah, Ga. Among those chosen on the executive committee for three-year terms is Forrest W. Brainerd, Scott Paper Co.

#### OTHER ELECTED OFFICIALS

● The United States Pulp Producers Association elected R. B. Wolf, manager, Pulp Division, Weyerhaeuser Timber Company, as its Pacific Coast regional director, and among its six directors-at-large, it reelected three from the Pacific Coast—Morton H. Houston, vice president, Rayonier Incorporated; Lawson Turcotte, executive vice president, Puget Sound Pulp & Timber Company, and U. M. Dickey, president, Soundview Pulp Company.

Oliver M. Porter, 122 E. 42nd St., New York City, is executive director.

Harold S. Smith was elected president and J. D. Zellerbach vice president of the Newsprint Manufacturers Association.

Mr. Zellerbach and John H. Smith of Hawley Pulp & Paper Company were among elected directors.

Willard J. Dixon of St. Regis was re-elected president of the Kraft Paper Association, Inc., with R. A. McDonald of Crown Zellerbach Corp., as one of the executive committee.

R. M. Harris of The Alling & Corey Co., Rochester, N. Y., was elected president of the National Paper Trade Association. G. E. Carpenter, of the Carpenter Paper Co., Omaha, Neb., was elected vice president.

Dwight L. Stocker, president, Michigan Paper Co., Plainwell, Mich., was elected president of the Association of Pulp Consumers, Inc.

Burt B. Fisher, Bergstrom, Paper Co., Neenah, Wis., was elected president of the Salesmen's Association of the Paper Industry.

Paul A. Mahoney, International Paper Co., was elected president of the Groundwood Paper Manufacturers Association.

Edgar W. Kiefer, Port Huron Sulphite & Paper Co., was chosen chairman of the Sulphite Paper Manufacturers Association.

#### MORE NEW MACHINERY

*One of the most important meetings of the entire week was that of the informally organized Paper and Pulp Machinery Manufacturers Association which heard how the bars are going to be let down somewhat by the War Production Board on new equipment and machinery for mills during the second quarter of 1944.*

Allan Hyer, in charge of the distribution section, pulp and paper, WPB, revealed that more materials for new machinery will

*be allotted for pulp and paper mill equipment in the second quarter, 1944, than in the entire previous two years. Materials for new machinery will be allotted during the second quarter up to 20 per cent of the amount used by each machinery company during the first half of 1941 (a survey was taken of about 60 manufacturing companies in that period before most of them got into work, therefore the new releases will total up to an estimated ten per cent of a normal year).*

It is reported that 47 per cent more carbon steel will be allotted to the manufacturers in the second quarter of this year than during the third quarter of 1943. Alloy steel allotment will be increased by no less than 781 per cent. Copper allotments will be 34 per cent greater.

However, there are some restrictive clauses in the new arrangements. New materials for new machinery will not be allotted to any manufacturers that would require more labor to do the work, or manufacturers that are in critical labor areas, it was reported.

AA3 forms will be the highest rating for equipment.

In last month's issue of PACIFIC PULP & PAPER INDUSTRY, a message from Mr. Hyer stated that "some materials are available" for new wood barkers, chippers and improvements in wood rooms, that would increase the yield of wood.

*If they are in need of new machinery of any type, the pulp and paper mills may now ask for reconsideration of previous denials and their requests will be brought out of the WPB files and given reconsideration.*

## Reports on the Technical Sessions

#### VISCOSITY TESTING METHODS

● It became an aggressively advanced policy of the TAPPI viscosity subcommittee to bring about a uniform method among manufacturers of cellulose for testing viscosity. About 80 attended this first technical session of the annual meeting, under the chairmanship of Mr. Hatch, of the Weyerhaeuser Timber Company, and it was evident that opinion generally was prepared for the abandonment of the American Chemical Society and TAPPI methods for control purposes and for a possible compromise between the cupriethylenediamine viscosity methods developed at the Ecusta Paper Company in the south and the so-called Hatch adaptation in the west.

Dr. Fritz Straus, who died in 1942, and R. M. Levy, his successor as research director at Ecusta, determined the solvent and how to use it and adopted a capillary viscosimeter. The so-called Hatch procedure adopted a falling ball viscosimeter. It was suggested that if a standard solution of cupriethylenediamine

could be prepared commercially and sold in five-gallon jars to mills, it would speed up the day of the adoption of a uniform method.

"A Rapid Cupriethylenediamine Viscosity Method for Control Work" and "The Nature of the Cupriethylenediamine Cellulose Solvent" were discussed in papers given by Dr. Levy. He pointed out that some precise methods for determining viscosity take too long for practical purposes in many mills and that a method that would make possible control of an entire mill on a viscosity basis was desired.

According to an abstract of his work "the procedure consists of first subjecting the moist pulp lap to a wet disintegrating process in a disintegrator resembling a continuous beater. The relative advantages of using a moist pulp sample for routine pulp and paper mill viscosity control can be readily appreciated if bleached pulp is being dumped from a conventional type of bleaching enigne with a definite narrow range viscosity specification. The rapid method of control

as presented was found to be very satisfactory for such purposes. Drying previous to determining the viscosity presents many experimental difficulties, and usually these procedures are expensive as well as tedious, especially if solvents such as acetones are used."

It further stated that the Ecusta method "is well adapted to 'mass production' control where many samples are handled daily. The entire test, including all operations in duplicate, can be carried out by unskilled workers in approximately 20 minutes with a degree of reproducibility of one per cent or better."

Edward P. Wood, technical director of the Longview mill of Weyerhaeuser Timber Company, then gave a brief report on "The Cupriethylenediamine Viscosity Method as a Control in the Manufacture of Pulp of Specified Viscosity."

He discussed the use in mill control of the method developed by Mr. Hatch and already described previously in a paper in this magazine. It was pointed out that his modification of the Straus and Levy method was accurate, simple, speedy



**D. K. BROWN**, President, Neenah Paper Co., Neenah, Wis., who has been elected the new President of the American Paper & Pulp Association, succeeding George H. Mead, head of the Mead Corporation, who served the past two years.

Mr. Brown commented: "I think the outstanding feature of the convention was the public acknowledgment by Mr. Donald Nelson of the essentiality of paper and paper products to both the war effort and civilian economy and the assurance of a receptive attitude thereto by the various government agencies."

and easily reproduced by the operator; that determinations were made in 20 minutes and two simultaneous runs in 22 minutes. Plant operation was said to be controlled in very narrow limits. And another measure was thus provided for pulp of higher quality and greater uniformity.

The experience at the Weyerhaeuser mill has so far been mostly with nitrating grades of pulp. Although there has been little experience obtained so far in paper grade pulps it was expected that the Hatch method would prove satisfactory in such cases. No attempts have yet been made to use viscosity as a substitute for bleachability tests but these were probable in the very near future.

It is believed that a future development in TAPPI will be to bring forward a new tentative TAPPI method of control which will be a choice between or a compromise between the Ecusta and Weyerhaeuser procedures. Well-informed observers said the American Chemical Society is also keeping open the way to possible adaption of the cupriethylene-diamine method.

### LOS ANGELES MAN'S PAPER

● W. R. Monette, Dicalite Company, Los Angeles, gave a paper entitled "Diatomaceous Pigment in White Patent Coated Solid Manila Board." The abstract follows:

"This paper covers results obtained by use of diatomaceous pigment in white patent coated solid manila board manufactured on a cylinder machine.

"Data giving the effect on the physical properties of the board, with and

without diatomaceous pigment, are presented in graph form. Test figures given were compiled from laboratory data kept on plant production runs. Composition of the furnish for both the liner and the filler stock is given. Test data given cover an average 9-hour period, and include caliper, weight, density, densometer in seconds, steam pressure, brightness, bursting strength, stiffness, tear, and tensile strength.

"In summarizing results, the following advantages are given as due to use of the diatomaceous pigment: (1) Bulking approximately 3½%, enabling mill to secure desired caliper without increasing weight specifications; (2) A given saving in fiber; (3) Better sheet formation, resulting in a smoother finish and more uniform sheet having better printability; (4) Faster drying, which could be utilized either as a saving in fuel for less steam required, or as a means of increasing production through faster machine speed; (5) Reduced unit production costs; (6) A general trend in improvement of the test."

### PAPER BY DR. HOLZER

● Vance Edwardes presided at the well-attended acid pulping session, which George H. McGregor, formerly of Weyerhaeuser Timber Company, was scheduled to m.c. Mr. McGregor, who had just left his post at the U. S. Forest Products Laboratory to take over a new position as head of the pulp and paper division, Swenson Evaporator Company, was unable to be present at the convention until the last day.

Dr. W. F. Holzer, of the central technical department, Crown Zellerbach Corp., Camas, Wash., gave a paper at this session entitled "Limits in Effect of Acid Concentration—Digester Pressure Relations in Sulphite Pulping" which will be published in a later issue of this magazine.

Another paper given at this session and to be published in full in a later issue was "Controlled Hydraulics on Flat Screens for Increased Pulp Production and Quality," by H. F. Schenck, service engineer, William A. Hardy & Sons Company.

Dr. Holzer's paper was a report on tests of cooks made on Western hemlock in a stainless steel digester at Camas, showing important savings in cooking time. The trend in recent years has been toward the use of higher acids and introduction of pressure towers and other equipment. The commercial importance of the findings were evident.

Following is an abstract of Dr. Holzer's paper:

"The benefits of more rapid cooking or any of its variations realized by use of high strength acid in the sulphite digester are well known, but the fact that the pressure capability of the digester is the limiting factor of these returns has not been emphasized. For a given pressure and temperature there is an optimum strength of acid. Above this strength the benefits are lost in relief. Below this strength the chemical cannot take full advantage of the pressure possibilities. At a pressure of 95 pounds and a temperature of 135 degrees C. the optimum strength is in the range of 6.25% free SO<sub>2</sub> (7.5% total SO<sub>2</sub>). Raising the pressure to 110 pounds, raises this optimum to about 7.75% free SO<sub>2</sub> (9.0% total SO<sub>2</sub>). With acids of 10% free and over there appear to be further benefits from penetration. Both from the experi-

mental work and observation, it appears that at 135 to 140 degrees C. a shortening of the cook by 15 minutes can be realized by increasing pressure 5 pounds, provided that the acid strength is adequate to take advantage of the pressure."

One of his listeners commented during the question period that it had been predicted that sulphur dioxide may become available at half the price per ton of sulphur which would be a considerable advantage. Another suggested that sulphite engineers and researchers had failed thus far from a scientific point of view in not cooking with chemicals that have a constant or increasing efficiency.

### WOOD UTILIZATION

● The wood utilization session dealt mostly with studies and developments in uses of Southern pine. Westerners, who have participated in some important wood room developments, may have been disappointed in this regard. Uses of southern bark and of fines from chip screens were discussed.

Coatings being done on paper machines themselves and not with brushes, as in the past, and discussions of new resins and adhesives and their war uses and possible postwar uses were given much attention. E. M. Lorenzini, representing the American Bitumuls Company of California, gave a paper on uses of bituminous emulsions and V-boards and containers. The uses of these so-called Bitusize products of this company were discussed in an article in this magazine last fall.

### PLASTICS SESSION

● So many papers were given in the plastics session that there was no time allowed for discussion, which might have just possibly brought out some interesting debate. Certainly, there are many highly debatable questions about the future of plastics in the paper industry.

Alfred J. Stamm, author of the article on the subject in the February issue of PACIFIC PULP & PAPER INDUSTRY, presided. Dr. Stamm, who is from the Forest Products Laboratory, discussed "Potentialities of Paper Base Lam-



**R. G. MACDONALD**, Permanent Secretary of TAPPI, who had his hands full staging the biggest Annual Meeting of the organization in its 29 years.



inates as Compared with Other Laminates."

"Through laminates," he said, "plastics have the best chance of outgrowing the gadget stage and finding a place for themselves in structural and semi-structural applications of industrial importance. Fortunately the field of laminates is the one in which paper shows the best potentialities."

A brief comparison between the properties and advantages and disadvantages of laminates made from glass fabric, asbestos paper, cotton, and linen fabrics, paper and wood veneer was made. The survey shows that there is no one material head and shoulders above the others. Each has its own field of usefulness. Paper, however, seems to show the broadest scope of possibilities.

According to Dr. Stamm: "Cross-banded laminated paper plastics are now being made that equal the best of the other cross-banded laminates per unit weight in all important strength properties except impact strength and yield strength in compression. The latter can be increased at the expense of a further loss in toughness. The chief research problem in the development of structural paper base laminates that confronts the paper and resin chemists is to develop means of improving the impact strength without seriously impairing other properties. This seems to involve making a more ductile product without too serious a loss in modulus of elasticity. A more ductile product would also be advantageous from the standpoint of moldability."

"Perhaps the biggest advantage of paper base plastics lies in the relative cheapness and availability of the base material and the relative productivity of paper machine equipment in contrast to the weaving equipment required for a number of the other laminate bases."

Among the papers on plastics were: "The Effect of Moisture Content of the Impregnated Sheet on the Physical Properties of Paper Base Plastics" by A. H. Croup, and "The Abrasive Resistance of Paper Base Plastics and Associated Materials" by E. R. Hoffman. They are both on the staff of the Hammermill Paper Company at Erie, Pa.

## PEROXIDE BLEACHING OF GROUNDWOOD

● An entire session was also turned over to the newly developed process for sodium peroxide bleaching of mechanical pulps. A number of groundwood producers already have indicated they will install this process after the war. It is not likely that anything can be done before then, because oxidized metallic sodium used in the process is a highly strategic war material and the sodium peroxide itself fills important war needs.

Powell River Company is just one of a number of firms which have indicated they are going to put in a plant.

The process was developed by the electrochemicals department of E. I. du Pont de Nemours & Co., Niagara Falls, N. Y. J. S. Reichert of du Pont presented the principal paper and there were a half dozen others on phases of the process, describing characteristics of the pulp, the printing properties of the paper, stain reactions, brightness, control of catalysts and descriptions of machinery. Because of the great interest in the subject, PACIFIC PULP & PAPER INDUSTRY will present some of these papers in the future issues.

Lyman Beeman and others of the St.

Regis Paper Company technical staff have participated in this research.

Dr. Reichert made this summarization of the process:

"Development work on the bleaching of mechanical pulps with sodium peroxide is progressing with favorable trends. Increases in pulp brightness of 8-10 G.E.



ROY K. FERGUSON, President of St. Regis Paper Company, who was elected one of the Vice Presidents of APPA.

units are obtainable with practically no weight losses at a chemicals cost of \$7.00-\$7.50/ton. The bleached pulp retains most of the desirable characteristics of unbleached groundwood and some new valuable properties are developed in the bleaching treatment. The bleached product may be considered a new raw material for paper manufacture in that it makes possible the production of papers with a combination of characteristics not readily obtainable by other means, i.e., high brightness and opacity, good freedom and formation, and exceptionally good printing qualities. Stability to heat and normal aging are improved by the sodium peroxide treatment. Fading and chemical degradation are lower in the bleached pulp; also, the drop of 1-3 points in brightness normally observed over the paper machine with unbleached groundwood does not occur with the bleached pulp.

"The bleaching process includes the following steps: (1) continuously feeding the sodium peroxide bleaching solution and pulp into a mixer in constant pro-

portions and at controlled rates, (2) thorough mixing of the bleaching solution with the pulp, (3) storage of treated pulp long enough to permit the bleaching to go to completion, and (4) mixing the bleached pulp with a neutralizing and reducing agent, preferably sulfite cooking acid.

"The chemicals used in preparing the bleaching solution include sodium peroxide, sodium silicate and sulfuric acid; under some plant conditions the use of a small amount of magnesium sulfate is desirable. Sodium peroxide is a granular solid containing 20% active oxygen; it is an alkaline bleaching agent, readily soluble in water. The chemical reactions involved in the bleaching action have not been studied but they are probably very complex in nature. The primary reaction is very likely a selective oxidation and decolorization of the small percentage of organic coloring matter naturally present in the wood. Sodium silicate performs the following functions in the bleaching solution: (1) It has detergent, penetrant and buffering properties, (2) It forms a protective coating on metals and thus inhibits corrosion of equipment, (3) It has some stabilizing action on alkaline peroxide solutions and retards peroxide decomposition. Sulfuric acid is needed in the bleaching solution for adjusting the pH to produce the best bleaching results. Under some mill conditions, i.e., when active forms of metal catalysts such as iron, copper or manganese are present in excessive amounts, the addition of magnesium sulfate to the bleach liquor or to the pulp slurry or to both will result in better bleaching.

"The treatment with sulfite cooking acid in the final stage has the following desirable effects: (1) It neutralizes the alkali remaining in the pulp at the end of the sodium peroxide bleaching step and lowers the pH of the pulp to the desired value, (2) It reduces the traces of highly colored ferric iron present in the pulp to the colorless ferrous form, and (3) It prevents the development of the pink color which frequently results when unbleached sulfite pulp is mixed in the beater with bleached groundwood containing traces of residual peroxide."

In the fundamental research section, attention was given to the work done by the Institute of Paper Chemistry in Appleton, Wis., in connection with the new uses being found for California Redwood by the Pacific Lumber Company at Scotia, Calif. It will be recalled that much of this material was published in an article in a recent issue of PACIFIC PULP & PAPER INDUSTRY. Harry F. Lewis, whose findings were reported in that article, presided at the session and participated in the discussions.

## Convention Notes

JUST before the convention opened in New York, R. B. Wolf, manager, Pulp Division, Weyerhaeuser Timber Company, stopped off at Philadelphia where on the evening of February 11 he gave a dinner meeting of the Delaware Valley Section of TAPPI a description of the new whole log hydraulic barker and whole log chipper at the Weyerhaeuser mill in Everett, Wash. The four-foot high model, made in the Everett mill's machine shop, was shown.

Helen U. Kiely, first woman member of TAPPI, refers to herself as "mother" of the association. She is laboratory director of the American Writing Paper

Corp., which has several mills at Holyoke, Mass. Was in Portland for the TAPPI '36 meeting.

N. Titlestad is now a consultant engineer on his own at 103 Park Ave., New York. He was on the West Coast in 1916 looking into possibilities of making high grade pulp with Western hemlock when many thought it impossible. Dr. Titlestad was with Joseph Hedin, who made tests on Western hemlock at Wilmington, Del. But then Hedin quit and went to Canada; Dr. Titlestad to Norway.

Thomas C. Walsh, sales manager, Hol-

lingsworth & Vose Co., was at his 35th consecutive annual APPA meeting.

Everyone pays close attention when Mrs. R. M. K. Cobb, research director of Lowe Paper Company, New Jersey, talks about coatings and sizings. She knows them.

Commentary on paper shortage—Eight times a week, about fifty New York theaters hand out thousands of programs to their customers. Each program consists of 52 pages, printed on heavy slick paper. About four pages are given to the actual program—the rest are filled with ads that very few theatergoers have time or the inclination to even notice. Nearly all go into a scrap heap three hours after they are handed out.

John Stadler, consulting engineer, Montreal, spoke his mind plain enough when he stood up in a wood use forum of TAPPI and said "the Pacific Coast states are the most wasteful of all of their wood resources, leaving much material in logged off lands that never get into the mills."

Stanford G. Blankenship, of 230 Park Ave., New York, president of the American Pulp & Paper Mills Association, was honored at one luncheon and dinner after another, by being seated at the head tables.

Canadian guests were headed by Alfred E. Cadman, secretary-manager of the Canadian Pulp & Paper Association, and Douglas Jones, chairman of the Canadian Technical Section.

It was verified that a plastic plant using wood pulp will be constructed at Drummondville, Quebec, with the backing of Celanese Corp.

At TAPPI sessions, John Ashby, technical director, Westminster Paper Co., Westminster, B. C., was from the farthest west point in Canada.

The installation of a new hydraulic whole log barker for small wood, made by Allis Chalmers, at South Brewer, Maine, was described in the New York Times and read by hundreds of mill men in town for the meetings. The log is supported on two parallel rolls with the nozzle above, at 12 o'clock. One roll turned the log; the other, with spiraled grooves, moves it forward.

Gustav Machlup, general manager, The Supertex Company, Androscoggin Pulp and board mill, South Windham, Maine, expressed great interest in the Port Townsend, Wash., log barker of Crown Zellerbach Corp. His mill, 11 miles from Portland, Me., was shut down over a year ago when many workers were lost to shipyards while ceiling prices kept down his wages. He is seeking war prisoner labor to reopen.

Crown Zellerbach Corporation and its divisions had two suites at the Waldorf and a good-sized delegation including Harold Zellerbach, head of the paper company, Vice Presidents McDonald and Youngman, Mr. Hecht and others from San Francisco, and Technical Supervisor Galloway and Drs. Holzer and Shinn from Camas, Wash.

Down from the Carthage, N. Y., mill of Crown Zellerbach Corp. were P. T. Sinclair, resident manager, and W. R. Benson, technical supervisor, who is the son of Dr. H. K. Benson of the University of Washington.

Niles Anderson, formerly manager of mills on Puget Sound, and now the head of the newly formed Marathon Paper Mills of Canada, with offices in the Canada Permanent Building, Toronto, was on hand for APPA and TAPPI meetings. Mrs. Anderson was in New York with

him. Mr. Anderson is going to build a new kraft mill in Ontario.

Walter M. Bain and A. N. Neubauer, formerly on the Pacific Coast as technical men, and now representing the paper products division of The Glidden Company, were especially interested in the coatings session.

Tom Moffitt, Tacoma, Wash., representative of Hooker Electrochemical Company, had several of his company associates on hand.

A. E. Montgomery, western manager for J. O. Ross, said he hoped to make his first western tour in several years before long.

Joe Scheuermann and Tom Carter of Cameron Machine Company, were heading for Washington state to install two more of their constant air control tensions in a coast mill about mid-March. Mr. Scheuermann said this magazine's write-up of the new control brought an inquiry even from England.

Ivar Ekholm, paper technician, National Aniline Division, Allied Chemical & Dye Corp., came up from his

are being made. James Foote, the technical director, also was present.

John H. Loomis, Heller & Merz Dept., Calco Chemical Division of American Cyanamid Co., New York, fooled the convention stenographer with his distinctive hand writing. She listed him as from "Huller & Mery."

At TAPPI sessions as usual was Harold Murdock, Champion Paper & Fibre Co., with fond memories of his coast trip a few years back.

Raymond P. Hill, Pulp Bleaching Company, and advisor to George Gunn, head of Webster-Brinkley, Seattle, was at the Hotel Roosevelt with Mrs. Hill. They stopped in their old home town of Wausau, Wis.

Earl Van Pool, from the San Francisco office, Brown Company, was present with a half dozen others of their pulp sales department.

There were several women participating in TAPPI meetings. Miss Ruth McConkey, bacteriologist, Riegel Paper Corp., collaborated with George Suydam on a paper on paper mill bacteria control.

H. R. Wemple, sales manager, Texas Gulf Sulphur Co., New York City, got around to several interesting sessions.

Still telling stories of 60 below weather at Kapuskasing, Ontario, where he is sulphite superintendent of Spruce Falls Power & Paper Co., Andreas Christensen came down to see many old friends. Mr. Christensen was technical advisor to the British Columbia P. & P. Co., before coming east in 1940. His Kapuskasing mill produces all the raw materials for the presently scarce Cleanex brand napkins.

Al Quinn, coast Superintendents' secretary and vice president of Stebbins Engineering Corp., came to New York via the home office at Watertown, N. Y. He got out of the upstate town before a 26-inch snow, which Mr. Richter of Stebbins had to battle before he left there.

Fred C. Clark, engineer now with his own office in Waltham, Mass., who once did design work for Washington state mills, and John D. Rue, Hooker Electrochemical, Buffalo, lived at the Chemists' Club while in New York.

Scott Paper Company, Chester, Pa., had large delegations at both APPA and TAPPI. TAPPI members on hand from Chester included Miss Ethel Lethold, Alfred Karpinski, S. F. Garrett, Jr., Walter Dempsey and Malcolm Pineo.

An unofficial count showed more Hercules Powder Company representatives registered for TAPPI than for any other company.

R. D. "Dick" Kehoe, of Paper & Industrial Appliances, Inc., New York City, has been busy making it possible for quite a few mills to use less common woods and formerly wasted wood for products through his company's Defibrator-Chempulper.

Halvar Lundberg, his Pacific Coast representative and also representative among other firms of Chempulper Process, Inc., Watertown, N. Y., was in the acid pulping session with A. D. Merrill of Chempulper Process, Inc.

Lawson Turcotte, executive vice president of the Puget Sound Pulp & Timber Co., Bellingham, Wash., was on hand for the APPA meetings but unfortunately a bout with the flu coincided and kept him to his room in the Plaza Hotel through some of the meetings.

Ed Wood, technical director, Weyerhaeuser Timber Company's mill at Long-



**FRANK YOUNGMAN, Portland, Ore., Vice President, Crown Zellerbach Corp., who was on hand with a sizeable group of Crown Zellerbach men at the "Paper Week" meetings in New York.**

downtown Manhattan office for the sessions.

The Hammermill Paper Company of Erie, Pa., which gets its paper from the Grays Harbor Mill of Rayonier Incorporated, 25 men, headed by N. W. Wilson, president; D. S. Leslie, vice president and general manager, and R. P. Price, vice president and general superintendent, at APPA and TAPPI. Hammermill has been more actively participating in technical presentations than ever before, stressing plastics.

Even the Anheuser, Busch beer people had delegates at TAPPI. Interested in yeast from mill effluent.

D. K. MacBain, a former plant engineer at Longview, Wash., and now chief engineer of Berst, Forster & Dixfield, subsidiary of Diamond Match Company, with offices in New York City, was a participant in many wood savings discussions. Experiments on using less common woods at his Plattsburg, N. Y., plant

view, was given a tussle by a cold that he picked up in a New York draft.

Mrs. Robert Robert may be the only woman manager of a paper company. She is running Robert Paper Co., New York, while her husband is an officer in the Navy.

At the Bulkley, Dunton Company's suite at the Waldorf, a newly developed type of highly transparent tape, which unwinds easily and has strong adhesive quality, was being shown. Bulkley, Dunton is handling the new PAX tape, developed by Cofax Corp. of Long Island.

George Teren, in business for himself at 52 Vanderbilt, New York, is one of several brothers of Nils Teren of Columbia River Paper Mills who are in the paper business in the east.

R. K. Prince and W. H. Tock, representing Allis-Chalmers, were interested in any talks about wood room equipment.

Gerald Penney, mill superintendent, Bowaters-Newfoundland Pulp & Paper Mills, recalled touring Everett, Bellingham and Longview mills in 1941. His company's new sulphite mill at Cornerbrook, Newfoundland, was shut down but the newsprint mill is operating.

A southern belle (correct), Miss Katherine Jackson, of Atlanta, is the first of her sex to become a territorial sales representative in the bag and paper industry. She represents Union Bag & Paper Corp. in four southern states.

A TAPPI member representing Rayonier Incorporated was A. G. Ready.

C. Elmer Macklem, sales engineer, and Harry C. Moore, vice president in charge of advertising, Beloit Iron Works, Beloit, Wis., were at several meetings.

G. H. Chidester, head of the pulp and paper division, U. S. Forest Products Laboratory, was present with several other Madison experts.



**MORTON B. HOUSTON**, Vice President, Rayonier Incorporated, Seattle, who was re-elected a Director-at-Large of the United States Pulp Producers Association. Pacific Coast men predominate on the new USPPA Executive Board, with Robert B. Wolf, U. M. Dickey and Lawson Turcotte as members along with Mr. Houston.

## WPB Envoy Finds Log Situation In British Columbia Still Tight

● Penton R. Cancell, special assistant director of the forest products bureau, War Production Board, at Washington, D. C., spent several days in British Columbia in late February making an independent survey of the log supply situation.

Mr. Cancell's study was directed primarily to the possibilities of obtaining additional pulpwood from British Columbia for Puget Sound mills. To get his information Mr. Cancell went to the sources best able to present the true picture, and after numerous conferences with Canadian timber control officials, operators and other authorities he left for the east with a comprehensive picture of the situation in his mind.

Mr. Cancell was particularly impressed with the unfavorable conditions facing the open market loggers in British Columbia who have naturally provided most of the pulpwood and other logs for export in the past. While lumber prices have been increased by the Timber Control on several occasions, at the time of Mr. Cancell's visit the open market loggers had received no substantial relief as to prices and the incentive created last year through depletion allowance on federal taxes had been discontinued at the end of 1943.

The tendency in British Columbia, as in other Pacific Northwest timber regions, has been for the larger sawmill and pulp mill organizations to acquire their own stands of forest so as to be independent

of the open market—a tendency partly due to the growing inaccessibility of suitable timber.

This has left the open market logger with a restricted market for his output, especially since the Timber Control established its embargoes on the export of logs.

On the other hand, the pulp and sawmills of British Columbia have made a case in favor of continued prohibition of exports on the ground that, as a result of manpower shortage and other conditions, they have barely been able to maintain operation with existing log supplies. The largest pulp and paper producer in British Columbia has been compelled to curtail its production of newsprint as a result of short log supply, and an important pulp mill was recently forced to shut down temporarily. Furthermore, the British Columbia mill operators are able to show that their product goes to virtually the same wartime customers as are served by mills across the border.

However, Mr. Cancell feels that the historic precedent established through limited export of logs in the past should not be overlooked, and he points out that important pulp manufacturing facilities were located in the Straits of Juan de Fuca on the assumption that they could look to British Columbia for at least a part of their raw material. In the face of that situation, there is a strong conviction in some quarters that Canada should do its best to relieve the log supply difficulties faced by those mills.

Carlo "Carl" Vicario, Nash Engineering Company, a past chairman of the Allied Industries group, is now giving full time to pulp and paper after working on marine and rubber equipment since the war started. C. L. Clark of Nash is planning the first West Coast trip for the company to the pulp and paper mills next summer.

R. F. Vokes and J. D. Haskell of Dilts and H. L. Kutter of Black-Clawson came from Ohio for TAPPI sessions.

Rex Vincent, of Bulkley, Dunton Co., was interested in chemical developments in particular at the Hotel Commodore sessions.

A. C. Emshoff came from Chicago for Inflico. He will travel to the coast for that company.

Walter L. Barker, president of Improved Paper Machinery Corp.; Homer Martindale of Shartle Brothers, and Phillips Dennett, of Bird Machine Company, are three of the most active leaders in the informally organized Pulp & Paper Machinery Association of which Mr. Dennett has been president since 1934. Dues were collected just once.

At the meetings for Monsanto Chemical Company were R. H. Mosher, Herbert Leonard and John Fleming.

H. B. Freeman, John Korwin and Ralph Kumler, who wrote the paper last year on melamine resins, were American Cyanamid men present.

For Foxboro, H. O. Ehrisman and Howard Michelmore.

Ward Pitkin, of Oliver United Filters, and Phil Goldsmith, of Pusey & Jones, were among others on hand.

## Increase In Facilities For E. D. Jones & Sons Co.

E. D. Jones & Sons Company of Pittsfield, Massachusetts recently announced the closing of their gray iron foundry after more than eighty years of continuous operation. The entire foundry personnel has been absorbed in other departments of the Company.

Many changes in design of the Company's large list of paper making equipment will call for the use of new materials in place of iron castings formerly used. A considerable volume of castings however, will still be required and arrangements have already been concluded with long-established nearby foundries who can give prompt service in supplying both gray iron and Meehanite castings.

The present foundry area is being remodelled for an assembly shop which will permit an extensive expansion of the Company's output of equipment for the war effort. It will also provide an adequate area for the assembly of paper mill products and place the Company in an excellent position to serve its many friends in the Paper Trade."



## Soundview Marks Tenth Anniversary

**G**ATHERING for dinner at the Everett Golf & Country Club, Everett, Washington, on March 7th, the department heads and plant directors of Soundview Pulp Company celebrated their tenth anniversary. Those present included:

L. S. Burdon, General Manager.  
G. J. Armbruster, General Supt.  
John Carlson, Asst. Supt.  
Percy Childs, Warehouse and Shop.  
Wm. Coster, Technical Director.  
Henry Dennis Logging & Timber Div.  
Robert Egan, General Office.  
John Eng, Personnel.  
John Fosse, Pulpwood Purchases.  
Don Grant, Assistant Supt.  
George Gladding, Assistant Supt.  
Norman Heglund, Wood Mill Foreman.  
George Hunter, Wood Mill Foreman.  
Jim Hodson, Chief Electrician.  
Amel Halver, Log Storage.  
Wm. Corbutt, Personnel.  
George Kirkpatrick, Warehouse Foreman.  
Corwin Knapp, Timber Division.  
Ralph Lundgren, Assistant Supt.  
John Moak, Master Mechanic.  
Don Matheson, Mill Stores.  
James McCarthy, Resident Engineer.  
Wm. McDonald, Woodmill Foreman.  
Bert Nelson, Accounting Dept.  
Joe O'Brien, Assistant Supt.  
Adolph Orupp, Laboratory.  
C. E. Ridgeway, Timber & Logging.  
Carl Ramstad, Instrumentation.  
Harold Stoddard, Sales and Traffic.  
Charlie Shively, Power House Foreman.  
Sam Salmonson, Assistant Supt.  
George Tostevin, Chief Accountant.  
Tommy Thompson, Engineering Dept.  
Ted Finney, General Supt., Lyman Timber Co.

### Leo Burdon Talks

During the dinner Mr. Leo Burdon made a talk in which he discussed some of the highlights of the past decade saying among other things:

"It hardly seems possible that I arrived in Everett ten years ago yesterday, as a member of the Soundview Family. Just ten years ago today the Soundview Pulp Company as it is now constituted commenced to function.

"Coming at a time ten years later, I am not now disclosing any state secret when I tell you that our company commenced operations under difficulties, both legal and financial. However, it has been our good fortune to have had, during these ten years an outstanding Board of Directors, which, incidentally, has not been due to any accident. Therefore, backed by their good judgment and the loyal support and cooperation of you good people here tonight, who are in effect the plant directors of our company, together with all of our employees, we have not only weathered some rather severe storms, but have expanded and improved our manufacturing facilities and organization to their present day basis.

"Our records show that 165 employees can celebrate today as the Tenth Anniversary with our company. If those who actually started any time in the month of March, 1934, were to be added, this figure would be somewhat increased.

### Far Sighted Policy

"To maintain our plant in operation requires rather large quantities of raw materials, principally wood. Thanks to

the far sighted policy on the part of our Board of Directors, they have permitted us to acquire timber holdings and financial interests in affiliated companies with the result that today, we have holdings and logging operations in all four Northern Washington counties. For the most part, these holdings are strategically located with respect to other timber. By way of making a maximum contribution to the war effort, we have been compelled to cut some of our timber much in advance of what good judgment would otherwise dictate. It will interest you to know that we have approximately 110 miles of well built truck roads and quite a large fleet of trucks of all character as well as extensive road building equipment. Believe me when I tell you that keeping you people here supplied with this raw material, requires a lot of time, effort and thought on our part.

"Looking to the future we now have a tree nursery at Hamilton in its third year. Results for the first year were not as satisfactory as anticipated, the war effort having taken most of the younger foresters. Even so, we have a good many thousand trees growing.

"All of the products being produced by the employees of our company today, without exception, occupy critical positions in the line of the war effort. Not the least of these is the Nitrating product for the manufacture of smokeless powder in the U. S. Army Arsenal Plants. We were requested in the latter part of 1942, to convert one unit to this product, and made the first run in January, 1943. The second unit will be ready in a few days, thus making available to these plants a very large volume of this critical product. It is hoped the day will soon come when we shall cease its manufacture because our plant was built for, and is capable of producing products which add to the niceties of life.

### Favorable Labor Relations

"From the standpoint of labor relations, we would like to feel that no company has a more favorable situation than exists in our plant. It has been our policy to adhere strictly to the uniform labor agreement and we intend to follow this course for the future. In our dealings with the standing committee and the local union officers, as well as the international officers, there have been times when doubtful cases have arisen. Both parties have followed the policy of "give and take" and as between these two alternatives, I think it a fair statement, that they are about equally divided. I would like to express our appreciation for this happy situation.

"The past ten years have brought many problems to all of you and believe me when I tell you they have brought many problems from the standpoint of management. From your standpoint I can give you the answers to some of your problems by telling you that since Pearl Harbor, we have released 136 of our then existing employees to the armed forces of our country, and today they are scattered nearly all over the world. Many temporary employees were also later taken. Since Pearl Harbor there has been a total of 926 "quits and discharges" or a total turnover of 1062.

"The pulp industry has been traditionally reserved to the men, but we have today

137 women and our compliments go to these people for the manner in which they have "taken over," so to speak. They are making a real contribution in this national emergency.

### Telegrams

"I can think of no better or more appropriate way of expressing to you and to all employees of our company, the feeling of gratitude and appreciation on our part than to read to you two telegrams, one from Mr. Walter A. Starr, chairman of our Board of Directors, and the other from Mr. U. M. Dickey, president of our company, both of whom are in California at the moment."

"It hardly seems possible that ten years have passed since the present management of the Soundview Pulp Company took over the operation of the Everett Mill. Looking back over the events of those years I think we can all feel satisfaction and pride in the record. Many difficult problems have been successfully met especially by the men of the Technical Staff so that today the company finds itself making an important contribution to the war effort. Please give to all my best wishes for the future with thanks and appreciation for their loyal cooperation and endeavor.

W. A. STARR,

Chairman of the Board of Directors."

"Am glad to know you are having a dinner tomorrow night as a sort of celebration of the tenth anniversary of the Soundview Pulp Operations. Please express my appreciation for the loyal support we have received from the employees of the company during the past ten years. It would have been impossible for us to have made a success of our operations without their whole hearted support. Sorry I cannot be with you.

U. M. DICKEY, President"

From Washington, D. C., congratulatory wires were received from R. M. Buckley, Vice President of Soundview Pulp Company and Roger Egan of the Bulkley, Dunton Pulp Company, New York City.

## Big Pulpwood Stands Blown Down In Texas

● A January storm in eastern Texas is reported to have blown down 500,000,000 board feet of pulpwood and 100,000,000 board feet of lumber. The Lufkin, Texas, mill of the Southland Paper Company, which recently went into the market as new producer of sulphate pulp as well as newsprint, is in the center of the storm swept area and several other mills are in easy hauling distance of the fallen wood.

Efforts were being made in early March by the U. S. Forest Service and WPB Paper Division and other government agencies to enroll a labor force of 6,000 or more to get out the wood. If not recovered, it would be destroyed in six months by fungus growth. A corporation was set up by the Forest Service to market the wood. Three war prisoner camps, composed mostly of Germans, were in the vicinity and 14 other prison camps were projected. This was expected to furnish most of the labor force.

Much of the area was under water because of heavy rains.

## Let's Be Sensible About Plastics, TAPPI Members in Philly Argue

● A live-wire unit of the Technical Association of the Pulp & Paper Industry is the Delaware Valley section which takes in members throughout Pennsylvania, New Jersey, Delaware and Maryland. In true TAPPI style, the group made a traveling representative of PACIFIC PULP & PAPER INDUSTRY welcome in a royal fashion at their dinner meeting on the evening of March 3 at the Engineers' Club in Philadelphia.

About seventy members, including half a dozen women, and some guests turned out for a most interesting discussion of "Some Applications of Pulp & Paper in the Plastics Industry," by Dr. Donald T. Jackson of the research department, Hammermill Paper Co., Erie, Pa.

To one who had already heard several papers on the fabulous plastics age now being predicted for the industry at TAPPI meetings in New York, Chicago and on the west coast, Dr. Jackson and the Delaware Valley members presented a refreshing point of view.

A lively discussion of this much-mooted subject wound up with the Philadelphia gathering—or at least many articulate members—agreeing that paper and pulp base plastics are "being pushed around" by extreme and unreasonable tests that were originally based on plywood, metals and other similar materials.

Dr. Jackson voiced the opinion, and there were many to back him up, that the industry ought to step out and offer pulp and paper thermoplastic, thermosetting and similar products as something brand new—not as a substitute for some other, temporarily unavailable material. Why should paper and pulp plastics be given impact tests that are far more extreme than any they would have to face in actual useage?

Over-optimistic publicity about a plastic development in the industry, claims that it would replace this or that and tests of no real meaning were making any really sound development very difficult.

### Emphasize Low Costs

● What the pulp and paper industry ought to emphasize—said Dr. Jackson and others—is the low relative costs of their pulp and paper plastics and the very satisfactory performance they make in many normal useages.

These pulp and paper base plastics can find many uses after the war in extensive housing construction, in airplanes, etc., without necessarily being of such strength as some tests seem to require.

Mr. Jackson showed quite a number of interesting samples, including airplane parts and ammunition boxes, paper base tubing made by a Chicago firm and phenolic pulp base filters, made in Detroit and used in thousands of airplanes.

The theme of discussion reminded this magazine's representative of an interesting bit of information obtained only the day before from a high ranking U. S. naval officer at the Philadelphia Navy Yard, who said he had authorized the installation of wood-pulp base plastic valve wheels at more than 1,000 controls in each of 26 new U. S. destroyers. They were in colors for damage control. He added that in preliminary tests it had

been thought necessary to subject these valve wheels to a terrific heat, which naturally curled them up. But this test later was established as totally unreasonable and unnecessary.

One of the impressive points about this Delaware Valley meeting was the free-for-all spirit in which the members participate in the question period. Like other eastern sections of TAPPI, the group is still able to hold regular monthly dinner meetings, unlike the Far West where travel difficulties and distances have forced restriction to only a few meetings a year. The Delaware group eats in the same dining room with one or two other societies. It takes a 15-minute intermission after dinner, for members to stroll around and talk with others present. Then the TAPPI group has the dining room all to itself for its meeting.

William M. Shoemaker, mechanical engineer for a long time with a vulcanized fiber company and now with Douglas T. Sterling Co., Stamford, Conn., consulting engineers, is the present chairman. He was on the Pacific Coast on a vacation trip in 1941 and was met and entertained by the late G. E. Brazeau of Everett, Wash., an old friend.

Jacob "Jay" Edge, vice president of Downingtown Manuf. Co., Downingtown, Pa., is the chairman of the program committee and also active on this committee is Carl Schmidt, manager of the Philadelphia office of the Dystuffs Division of E. I. duPont de Nemours & Co. He was formerly on the staff of a big Pennsylvania mill.

### Woman Is Secretary

● Lois Hans, in the paper laboratory of Hercules Powder Co., Wilmington, is the secretary and she has long done a most efficient job in this capacity.

C. M. Connor, Glassine Paper Co., Valley Forge Laboratories, Conshohocken, Pa., is a former chairman and very active member. He and Lois Hans recalled the visit to the section meeting a few years ago by Harlan Scott, former editor of PACIFIC PULP AND PAPER INDUSTRY.

Louise McGrath, of Booth Chemical Co., Elizabeth, N. J., formerly in California with Fibreboard Products Inc., is another active woman member.

Known by some mill men on the west coast is Ray E. Harter of R. T. Vanderbilt Co., New York, who works in this firm with Charles Champion, manager of their paper department.

The dean of the Delaware Valley section—"grand old man" of the group—is Almeron Wickan, general superintendent of McAndrews and Forbes Co., Camden, N. J., a most interesting company which began as a producer of licorice root products and later used the root pulp to make board. The board mill now "is the tail that wags the dog," he said, being its important unit.

H. Harmsen, Jr., and E. Worth, assistant chemists from Paterson Parchment Paper Co., Bristol, Pa., whom the writer met earlier in the week at their bright, airy and very dry-under-foot plant, were present. They are assistants to Roy Dufford, chief chemist of the

Paterson Parchment Paper Co., which has a converting plant in San Francisco.

Some others met by the writer were J. M. Farnum, Taylor Fibre Co., Morristown, Pa.; M. D. Reuben, assistant manager, Southern Kraft Div., International Paper Co., York Haven, Pa.; Edward Moline, Glassine Paper Co., Manayunk, Pa.; Lewis B. Miller, of W. H. & L. D. Betz, Consultants on Water Problems, Gillingham & Worth St., Frankford, Philadelphia, Pa.; Joseph Plumstead, mill manager, Jessup & Moore Co., makers of Bible and book papers, at Providence, Maryland; Harold Donnelly, production manager, Norristown Magnesia and Asbestos Co., Norristown, Pa.; several other Downingtown men, including E. T. Street, chief engineer, and Oscar C. Cordes, sales engineer; Alan R. Boyd, representative in Philadelphia of F. C. Huyck & Sons; J. Brisco, of Pusey & Jones, Wilmington, Del., and R. G. Macdonald, national secretary of TAPPI, who was down from New York.

### Hoquiam Plant Near Normal

● The Rayonier plant at Hoquiam, Wash., whose production had been hampered by a strike that lasted two months and a previous "slowdown" of several weeks, went into practically full operation again on February 10. It has continued to produce at virtually normal rate for the past several weeks. A jurisdictional dispute between a CIO and AFL unions in which the CIO defied War Labor Board rulings favorable to the AFL, had hampered production since April, 1943.

In settlement of the dispute, the maintenance of membership clause in the uniform labor agreement between the AFL unions and the Pacific Coast industry was waived temporarily until March 9 in the case of the Hoquiam plant. The CIO strikers voted to return to work when the provision was waived.

After March 9, the labor dispute was in danger of boiling over again. If enough CIO insurgents returned to the AFL, this would be prevented. Or, the attitude the AFL unions might take in regard to enforcement of their agreement could be the decisive factor in determining whether peace would be broken again.

### Technical Staff Has New Duties In Washington

● One of the youngest officials called to Washington to serve in the War Production Board paper division is Wylie L. Jennings, 33-year-old paper mill superintendent of the West Virginia Pulp & Paper Company, Covington, Va. He is chief of the technical staff.

Owing to shortages of pulp and paper, this staff is no longer engaged in trying to develop new war uses for these materials. It deals with mill and supply technical problems.

### Dividend Declared

The Board of Directors of Puget Sound Pulp & Timber Co. recently declared a dividend of 25c a share on the common stock and the regular quarterly dividend of 30c a share on the preferred stock, both payable April 1st to stockholders of record March 18, 1944.

## Work on Foundations Begin for Biggest Pulp Mill Alcohol Plant in World at Bellingham

● The biggest plant ever built to produce alcohol from pulp mill effluent is being erected at Bellingham, Wash.

The plant—which will be the only one of its kind in the United States—is being built by the Puget Sound Pulp & Timber Company with federal funds amounting to \$980,000. The entire production approximating 2,000,000 gallons of alcohol per year will go to the government for war purposes—to be used in production of synthetic rubber, explosives, etc.

As this issue went to press the piling foundation for the plant in Bellingham's harbor was to be well underway and this was to be followed as rapidly as possible by construction of tanks, steam-stripping system and fermentation equipment. The stripping operation, fermentation, neutralization and storage comprise the principal units to be built. Principal construction will get under way during April.

The only other North American mill now making alcohol with pulp waste, the Ontario Paper Company, at Thorold, Ont., uses an air stripping system and this is common in European countries. The steam stripping system to be installed at Bellingham is said to be the first of its kind and in a future issue of this magazine a full description of the process will be published.

The Thorold mill, owned by the Chicago Tribune, has been making

alcohol since last summer when the plant was opened with elaborate ceremonies heralded by William Jeffers, head of the Union Pacific railroad, who was then the U. S. Rubber Director, and other high officials. Its wartime service, particularly in helping tide the United Nations over the rubber crisis, has been widely publicized through Colonel Robert McCormick's newspaper which obtains its newsprint supply from the same mill.

### Bigger Than Thorold

However, the sulphite production at Thorold is much smaller than at the Bellingham mill. Its capacity is 450 tons per day but recently it had been running at about 60-70 per cent capacity.

In Germany, Norway, Sweden and Finland, nearly all sulphite mills are reported producing alcohol as a by-product, with government subsidies, but none of them is as large as the Bellingham plant. Lack of grain caused a great extension of this production in Europe and the alcohol is used for many purposes, even driving vehicles.

The West Virginia Pulp & Paper Company about 20 years ago made alcohol on a small scale from waste liquor at a southern mill but this was discontinued and the Bellingham mill will be the first to produce on a large scale.

The Defense Plant Corporation in Washington, D. C., is putting up the \$980,000 for construction. The contract was drawn up after all WPB and other agencies approved the project.

Fred G. Stevenot is president and Lawson P. Turcotte is executive vice president of the Bellingham company. Erik Ekholm, general superintendent, and Eric Erickson, technical director, have been actively engaged in making plans for the plant.

Only the sugar in the waste liquor is utilized. About a maximum of 20 gallons of alcohol may be produced from the effluent from a ton of pulp.

### C-Z Honors Loggers

Although rarely are pulp and paper mill logging activities recognized and rewarded, Crown Zellerbach Corporation has found a way to honor men of the woods.

At a dinner held in the Florence Hotel, Florence, Oregon, on February 10th, service pins for each five years of service as woods employees were presented to the following loggers from the Silcoots operations:

#### Thirty Year Pins

John L. Melvin, Boom Foreman.

#### Fifteen Year Pins

Ray Cain, Donkey Engineer, Lawrence F. Haolcomb, Groundman, Arthur E. Olson, Bullock, B. F. Ross, Superintendent.

#### Ten Year Pins

William T. Pearson, Dbl. Drum Operator, Tureman F. Smith, Bulldozer Operator, Lewis Wampler, Buckler, Harvey Hanson, Bullbuck, Merle Hanson, Faller, Norman Hanson, Buckler, Elvin A. Jackson, Buckler, Paul Landwehr, Saw Filer.

#### Five Year Pins

Herbert E. Bender, Office Manager.

Presentations were made by Ed. P. Stamm, Portland, Logging Manager.

Guests included C. E. Nichols, superintendent of Crown Zellerbach's Seaside operations; J. E. Backer, Seaside; Ted Kegner, Cathlamet; and Miles Murray, assistant to the general safety supervisor, Portland, Oregon.

### Business Brisk

An interesting letter from Mr. Alfredo Mastrokolo, chemical engineer with the Paramonga Paper Company of Supe, Peru, was received recently by Sidney Collier, sulphite supervisor with the Puget Sound Pulp & Timber Co. Mr. Mastrokolo reports a brisk business for his company, which is located in the highlands just out of Lima. He will be remembered as a student who made studies of Puget Sound pulp mills in 1940. He asks to be remembered to his many acquaintances here. While in the United States Mr. Mastrokolo associated himself with TAPPI.



ELENORE STADE, sawyer in the aeroplane spruce division of Pacific Mills, Limited, at Ocean Falls, B. C. Previous to her present work she was a setter on the pony carriage. She is just one of the many girls who have adapted themselves to industry and are filling the shoes of men on the home front.



## "Hidden Costs" High In Industry Accidents

● A startling diagnosis of the "hidden costs" in lost-time accidents, which would apply to pulp and paper mills, as well as any other industry, has been published by Columbia Basin Loggers' Association.

Ed Crosby of the Association turned over the "Coat Pocket Picture of Accident Costs," which he wrote, to this magazine and suggested a review of the items might be of interest.

Under "visible costs" to the employee, he lists industrial insurance and medical expense. But under "hidden-costs" are a long list of items, including lost time of the injured man, of the foreman, of the entire crew, damage to equipment, interference with production, inability of worker to produce up to par on return, welfare and benefit systems, loss of profit on idle machine, damaged product, allowance of wages while off duty, lessened production rate with untrained men, legal expense and court judgments.

Hidden costs to the employer are four times as great as visible costs, according to The National Safety Council.

Mr. Crosby lists as "costs to the employee victim"—loss of salary less any compensation, inability to make payments on car, house, etc.; refinancing debts, reduction of ability to do home chores, restricted education for children, shock to family, loss of limb, eye, etc., lessened ability to earn, pain, suffering, loss of courage.

For the last half of 1942 logging accidents in Oregon totaled 1,950 lost-time accidents with 30 fatalities.

For the last half of 1942, here are some accident figures from the state industrial accident commission:

	Lost Time	Fatal-	Man Days
Accidents	ities	Worked	
Logging — 1950	30	1,222,393	
Shipbuilding — 6082	15	5,920,466	

If the same number of men worked in logging as in shipbuilding, says Mr. Crosby, the score would be, approximately:

	Lost Time	Fatal-	Man Days
Accidents	ities	Worked	
Logging — 10,000	150	6,000,000	



THE NEW CAMAS VICTORY CENTER, constructed by Crown Zellerbach Corporation in front of the Camas, Wash., mill, as it appeared during dedication ceremonies on January 19, with the Camas High School band, led by Wayne Moffitt, furnishing music.

Special V-panel material for postwar housing, invented by C. W. Morden, was used in the structure.

## Victoria Paperboard Mill Installs Coal Stoker

● Sidney Roofing & Paper Company at Victoria recently discovered that the supply of hog fuel was not sufficiently dependable and that facilities would have to be installed to provide a steadier flow of fuel to the steam plant.

To meet that situation the company has installed an Iron Fireman spreader type coal stoker. It is of 1300-pound per hour capacity and has been installed on a 200 H.R.T. boiler, which is the largest of three in the company's steam plant.

This installation permits the plant to carry up to 70 per cent of the steam load on coal or hog fuel. According to the management, the arrangement has proved sufficiently flexible to meet requirements and generally satisfactory.

Sidney Roofing & Paper Company, headed by President R. W. Mayhew, with R. Logan Mayhew, managing director, operates at a plant on Victoria's inner harbor. It produces roll roofing, building papers, insulating materials, waterproof paints and box boards.

## Calco Chemical Buys United

Calco Chemical Division, American Cyanamid Company, recently announced the purchase from Interchemical Corporation of its United Color and Pigment Company Division located in Newark, New Jersey.

United, with manufacturing facilities covering eight acres and employing some 500 people has been a major factor in the production of organic and inorganic chemical colors.

## G. E. Appointment

G. A. Gustafson has been appointed manufacturing manager of the plastics divisions of General Electric's appliance and merchandise department, 1 Plastics Ave., Pittsfield, Mass., it has been announced by W. H. Milton, Jr., manager of the plastics divisions.

D. C. Prince, vice-president in charge of application engineering, General Electric Company, Schenectady, N. Y., visited the Pacific area to take part in various discussions of post war industrial problems. H. V. Erben, manager of the company's central station divisions, Schenectady, also visited in the Northwest and California.

## Hawley Retires Preferred Stock

The board of directors of the Hawley Pulp and Paper Company on February 29 retired 7 per cent first preferred stock. On or after April 1 the shares, of which 20,000 are outstanding, will be redeemable at \$105 per share plus accrued dividends amounting to \$1.75 per share.

This action became possible through arrangements to borrow \$2,000,000 at a rate of interest which amounts to \$77,500 per year as against the accumulative dividends of \$140,000 a year on the stock to be retired. The loan provides for a minimum annual payment over a 15-year period, but offers the advantage of accelerated payments if desired, according to John H. Smith, president of Hawley Pulp & Paper Company.

Shareholders have been directed to turn in their stock at the trust department of the United States National Bank of Portland where they will be reimbursed in cash and also receive the accrued dividend payments.

Hawley directors also authorized the first quarterly dividend for 1944 on the company's second preferred stock.

## Scottish Paper Mills To Make Plastics

● The journal British Plastics was asked for a definition of the term "plastics" and quotes from a dictionary of chemistry: "Compositions of organic origin, natural or synthetic, which can be moulded by heat or pressure or both." Blamange, for instance?

The same journal says some Scottish paper making firms are turning to the manufacture of plastics, though "details cannot be issued at present." "The possibility of wafer type plastics being adopted as an alternative to card or strawboard has been obvious and has forced paper makers into new experimental work to still further develop their product in competition with newer types," it says.

## Locke Visits Camas

W. Locke, plant engineer of Pacific Mills, Ocean Falls, B. C., spent March 4 at the Camas, Washington, Crown Willamette mill on a tour of inspection, and to renew acquaintances.



LIEUTENANT LARRY C. LOMAX, formerly Timekeeper in the corrugator department, Pioneer Division, The Flintkote Company, Los Angeles, who is a U. S. Army infantry officer.

## Paper School Graduates 52 To End Second Wartime Year

Camas mill work and educational efforts walk hand in hand toward future / / / Postwar plans mentioned by J. D. Zellerbach to students who are preparing to participate in them / / / Three men finish course.

Completing an adventure in education which has no counter part in the world, fifty two employees of Crown Willamette Division of Crown Zellerbach Corporation and students also in the Paper School at Camas, from both the West Linn and the Camas mills, were graduated on Thursday, March 9th, 1944, at the Eleventh Annual Graduation and Banquet in Nora Self Hall, Camas, Washington.

The graduation class of 1944 equalled in size that of last year because conditions which affect enrollment and attendance, such as gasoline rationing, over-time hours, and like obstacles, were identical with last year. Customarily, larger groups take advantage of these courses which lead to full credit toward a college degree at Oregon State College and at the University of Washington. In the 4-year Paper School course a student may earn 16 hours toward a degree at either institution, and Paper School records show that a total of 156 students have since its inception earned the full 16 hours. The list gives 219 who have completed three years, 417 who have

finished two years, and 745 persons who have gone through one year of instruction.

To prove the value of earned credit, Bob Kirkwood, former Kraft Mill chemist of Camas Crown Willamette, received his diploma with honorable mention. But on March 27, 1944, Kirkwood will receive from Oregon State College a degree of Bachelor of Science in Chemical Engineering. The degree, based upon completion of three years of Paper School work, which granted him the necessary 12 hours to complete his educational requirements at Oregon State, likewise opened for Kirkwood the pathway toward a commission in the U. S. Navy, and the opportunity to enter radar work in that service. This is the first instance of college graduation with less than the full four years of Paper School. Dr. A. L. Strand, president of Oregon State College, and Prof. G. W. Gleeson, Assistant Dean of the School of Chemical Engineering, O.S.C., were interested spectators.

The Paper School, which began modestly as a study group in the

Camas mill during the days of 1933, with this event concluded its eleventh year as an educational institution, and its second war-time school year. Of the fifty two students who faced J. D. Zellerbach, President of Crown Zellerbach Corporation, who travelled from San Francisco, California, to present the diplomas, fifteen were women, and seven other students had made the long trip from West Linn to attend night classes once a week during the years of their enrollment: Five in the second year course; one in the third year; one finishing the fourth year and winning final graduation after 7,000 miles of travel. The enrollment for the graduating classes follows:

29 in the First Year Course

14 in the Second Year Course

6 in the Third Year Course

3 in the Fourth Year Course

Mr. Zellerbach adverted to the overtime work hours and referred to the diplomas as recognition of extra effort above that which was expected of the employee—an equipment for advancement. Mentioning post war



Left to right: A. G. NATWICK, Assistant Resident Manager, Camas Mill, Crown Zellerbach Corp. and Dean of the Paper School, made the honor awards; J. D. ZELLERBACH, President of Crown Zellerbach Corp., San Francisco, presented the diplomas; J. E. HANNY, Resident Manager, West Linn Mill, Crown Zellerbach Corp., West Linn, Oregon; C. E. BRUNER, Manager, West Linn Mill. Mr. Hanny and Mr. Bruner are Regents of the Camas Paper School.

Honor students in the First, Second, Third and Fourth Year Classes of the Crown Willamette Paper School for the years 1943-44:

Top Picture, left to right: First Year Class—FREMONT EVERETT, Honorable Mention; MILDRED GRAE, Second Place, and VICTOR HOPPER, First Place (GIRARD ECK and RICHARD CAVITI were absent).

Second Picture, left to right: Second Year Class—GERHARD JAFFE, Honorable Mention; WM. MCGILL, First Place; IVA SCHWANZ, Second Place; PETER WILKIE, Honorable Mention; CARL LORON, Honorable Mention.

Third Picture, left to right: Third Year Class—BERT SULLIVAN, First Place; ROBERT KIRKWOOD, Honorable Mention, and JOSEPH BRAZNEY, Second Place.

Lower Picture, left to right: Fourth Year Class—EVERETT F. BAKER, Second Place; MITFORD R. PERSYN, First Place, and WILLIAM E. DAMON.

plants, and noting the Port Townsend mill barker as an instance of extra curricular activity in a single mill, he showed how those who are prepared can be utilized later in the growing up of the mill and the industry. He further asked for full cooperation in welcoming the men who come back to work when the war is won.

Mr. J. E. Hanny, Resident Manager of Crown Willamette Paper Division, Camas, and one of the Paper School trustees along with Albert Bankus, Vice President of Crown Zellerbach Corporation, San Francisco, and C. E. Bruner, Resident Manager of Manufacturing, Crown Willamette Division, West Linn, opened the ceremonies by praising the fine school attendance and excellent grades, and said both had justified the decision to keep the school running. Thanking the professorial staff, Hanny said the school attracts a great number of young folk, which tends to increase efficiency. He then turned the direction of ceremonies over to W. D. Welsh, Public Relations Office of Crown Zellerbach Corporation, San Francisco, who kept the audience in high spirits throughout the evening as Toastmaster, intermingling humorous and serious with rare discretion. He introduced guests, including F. N. Youngman, vice president of Crown Zellerbach Corporation, Portland, members of the Paper School faculty, and read letters of congratulation from Louis Bloch, H. L. Zellerbach, and Albert Bankus, officials of Crown Zellerbach Corporation, San Francisco, and from Reed Hunt and Fred Olmstead, of the Camas staff.

Before the degrees were granted,



the four graduating groups were addressed by Mr. Paul B. McKee, President of the Portland Gas & Coke Company and the Pacific Power and Light Company by way of a

Baccalaureate. Mr. McKee, a former school mate of J. D. Zellerbach, told, in speaking of a trip to Brazil, how Germany had obtained quartz crystals for its army radio guidance





F. N. YOUNGMAN, Vice President, Crown Zellerbach Corp., Portland; Dr. A. L. STRAND, President of Oregon State College; W. D. WELSH, Public Relations Office, Crown Zellerbach Corp., Portland.

which led us to discover that nation of greater area and more resources than we have, but he proved our nation to be far more advanced because we appreciate and utilize education.

"The frontiers are still here," added Mr. McKee, "as long as we maintain an economy of plenty, with opportunities to hold jobs, to secure education, and to save and invest." In closing, he admonished, "It pays to help the other fellow. The future is ahead. God speed, and plenty of everything."

A list of honor students as follows received the commendation of Dean A. G. Natwick, Assistant Resident Manager, and awards designated for the varied individual distinctions, of books, flowers, or subscriptions to Pacific Pulp and Paper Industry. The two top students in the fourth year class, E. F. Baker and Mitford R. Persyn were given a trip of one week's duration to visit the various mills in the northwest, with their regular wages and all expenses paid. He also commended the faculty, saying, "It would not be possible to conduct this school if it were not for the men who have made as great sacrifices as the students, both instructors from the mill, and those from industry outside the mill."

#### Fourth Year Class

Mitford Persyn, First Place; Everett Baker, Second Place.

#### Third Year Class

Bert Sullivan, First Place; Joseph Brazney, Second Place; Robert Kirkwood, Honorable Mention.

#### Second Year Class

Wm. McGill, First Place; Iva Schwanze, Second Place; Gerhard Jaffe, Honorable Mention; Peter Wilkie; Honorable Mention; Carl Loron, Honorable Mention.

#### First Year Class

Victor Hopper, First Place; Mildred Grae, Second Place; Fremont

Everett, Honorable Mention; Girard Eck, Honorable Mention; Richard Caviti, Honorable Mention.

At intervals throughout the evening Joseph Sampietro and his KOIN string ensemble furnished appropriate music.

Students who have now either finished the Paper School course, or who have advanced preparatory to the course for the ensuing year, were:

#### Fourth Year Graduates.

E. F. Baker, Mitford R. Persyn, Wm. Damon.

#### Third Year Graduates

Joseph Brazney, Delmar Gehlen, Fred Good, R. B. Kirkwood, Bert Sullivan, Lewis Richardson.

#### Second Year Graduates

C. A. Anderson, Richard Adams, Joel Edwards, Florence Virts, R. G. Jaffe, Fred Maffei, F. M. Mighells, William McGill, Morrell Loucks, Carl A. Loron, Gordon Nast, Iva Schwanz, Lindroff Skaar, Peter Wilkie.

#### First Year Graduates

Vera Berney, Carl Britton, Malka Bestel, Belva Bruger, Richard Caviti, Harold Coe, Myrtha Cosser, Leonard Cosser, Robert Dexter, Fremont Everett, Girard Eck, Howland Fleming, Edwarda Gilmore, Mildred Grae, Glenn Gunderson, Doris Goff, Hattie Jackson, Jack Krank, Mabel Lindgren, Charles McDonald, Rufina Hughes, Victor Hopper, Maxine Olsen, Henry St. Lawrence, Mary Stofer, Lucille Schraeder, Laura Tidland, Robert Tueth, Charles Wheeler.

### Ontario Paper Co. Donates Prize

Canadian Pulp and Paper Association has offered a prize of \$1000 for the best suggestion which will lead to "greater use of hardwoods in the manufacturing of newsprint." The award was donated by Ontario Paper Co.

### Capt. Frymire Awarded DFC

Captain Dale Frymire, until his enlistment in the U. S. Army Air Corps, the storekeeper at Crown Zellerbach mill at Camas, Wash., has been awarded the Distinguished Flying Cross for "extraordinary achievement" during a flight, according to Associated Press report of March 2.

Captain Frymire's citation relates that he was the pilot of a B-26 bomber on a mission over Italy on September 24, 1943, to bomb a bridge, and continues: "Just prior to the bombing run, his plane was badly damaged by anti-aircraft fire. While he was attempting to keep his crippled aircraft in formation, fragments from an exploding shell wounded his copilot."

"Although the plane went into a steep dive when the unconscious body of the copilot slumped over the wheel, Capt. Frymire managed to remove his wounded comrade and succeeded in regaining control of the aircraft. This officer then led the entire group over the target to complete a successful bombing run. By his clear thinking and coolness under fire, Capt. Frymire made possible the completion of the assigned mission. His unflinching devotion to duty in sorties against the enemy has upheld the highest tradition of the AAF."

Frymire, son of Mr. and Mrs. W. D. Frymire of Mill Plain, Washington, was graduated from Mill Plain Union high school in 1938, and from Clark Junior college in Vancouver in 1940. On leave of absence from the Camas Crown Zellerbach mill where he worked from Nov., 1940, until October, 1942, Captain Frymire has been returned from the front and is now on duty at Shreveport, Louisiana.

### Gunpowder Bags Made of Rayon

● A military application of rayon which can now be made known is its use in cartridge or powder bags for the army's heavy artillery, the American Viscose Corporation announces. Much of this rayon is made from wood pulp.

All powder bags previously were made of silk, it was said, one of the chief reasons being that silk burns almost instantaneously and leaves no heated fragments that might ignite gases inside the gun. The rayon cartridge bags, which have been found satisfactory in this respect, are made of a heavy material that is practically identical with the rayon sail cloth made some years ago for racing yachts.

### Members of Puget Sound Enjoy Party

A gala evening was spent by members of the maintenance and engineering staff of the Puget Sound Pulp & Timber Co. February 13th at the Twin Gables Inn in Bellingham. The party of seventy-five men and their ladies enjoyed a banquet and an evening of dancing.

A very fine part of the entertainment was the showing of colored movies of Panama and the Canal Zone by Mr. Victor Haner, Plant Engineer. Mr. Haner was an engineer in the Canal Zone and returned to the United States in 1941 before locating in Bellingham. The party was arranged by Mr. Oscar Brandt, pipe fitter foreman, and Mr. Pete Anderson of the same department. Mr. Brandt also acted as toastmaster at the dinner.

## Paper Tubes Used as Concrete Pier Forms; Saves Uncle Sam Millions of Dollars

Here is the story of a new paperboard product which is believed to have saved the government several million dollars and which also has made important savings in labor. It is a laminated, spiral wound specially constructed and treated fiber tube for concrete pier forms on construction jobs.

Savings are so important the new product can be classed among the new uses of paper, developed under impetus of wartime emergency, which holds promise of enduring in use during peace years.

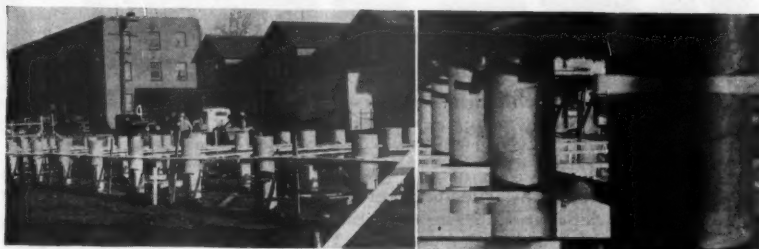
Sonoco Products Company of Hartsville, S. C., and Mystic, Conn., is the manufacturer. The tubes—called Sonotubes—have appeared on war emergency construction work on the Pacific Coast and have been approved by army engineers, navy department of yards and docks, the public buildings administration and federal housing authority.

### Research Engineer's Idea

In a letter to PACIFIC PULP & PAPER INDUSTRY, C. H. Campbell, vice president, in charge of sales, Sonoco Products Company, Hartsville, said:

"We do not believe that paper has been used before for concrete forms. Certainly, it has not been used to any great extent. We have been producing paper tubes for over forty years but had not known of their use for a similar purpose before."

"One of our research engineers had occasion to observe the construction of an army camp nearby. After seeing the great amount of labor and lumber used in the construction of pier forms, he approached the contractor to ask why a paper tube could not be used for the pier forms. This resulted in an immediate test and some work on the part of our research department. The test was very successful. The U. S. engineer on the job reported



PAPER IS BEING USED—REPORTEDLY FOR THE FIRST TIME—as tubular forms for concrete. The above pictures were taken at a Seattle housing project, one being a close-up and another a distant view of Sonotubes, manufactured by the Sonoco Products Company, Hartsville, S. C. Thousands of dollars are reported saved in using these convolute paperboard concrete forms instead of lumber.

the results of tests to his superiors and specifications for all army camps were changed to permit the use of paper tubes as pier forms. All specifications previously called for square piers but were changed to permit round piers, in order to take advantage of the saving in using tubes as pier forms.

"On the first job where Sonotubes were used in the construction of an army camp, the contract was let on the basis of using wood forms. After construction had begun specifications were changed so as to permit the use of round forms, and as a result of using Sonotubes instead of wood forms, the contractor rebated to the government \$40,000 as representing the saving on that job alone. Since that time Sonotubes have been used in the construction of many army camps and air bases. The saving to the government has, perhaps, run into several million dollars, to say nothing of the saving in manpower."

"The statement which I have made above about the contractor rebating the government on the first job where Sonotubes were used is on record in the U. S. engineers office and can be verified."

Yours very truly,  
SONOCO PRODUCTS COMPANY,  
C. H. Campbell,  
Vice President  
In Charge of Sales."

Tubes are made of five standard diameters—nine inches, inside, up to 13½ inches, inside. Lengths are up to 24 feet, depending upon size of railroad car available.

The tubes or piers are cut to correct length right on the construction job. In this one operation is summed up the whole story of time, money and man-hours saved. Cutting by hand or power saw is a matter of seconds, much simpler and easier to handle than wood. The form is then braced in an upright position and is ready for pouring of concrete.

### Roy Johns and Wife Have Reunion With Son

Roy B. Johns, assistant vice president and sales manager of Freeport Sulphur Co., 122 East 42nd St., New York City, and Mrs. Johns had a reunion with their son, Cpl. Robert Roy Johns, U. S. Army, about March 1.

It happened that the son, who got his basic training in North Carolina and a year at Cornell University, was on maneuvers at Nashville, Tenn., when Mr. Johns reached that vicinity with his wife on his annual trip to the sulphur mines in Texas and Louisiana. The son, who is in heavy field artillery, got a three-day leave for a rare get-together with his folks.

### Victor Hughes Heads Community Chest

Mr. Victor Hughes, executive secretary of the Pacific Coast Paper Mills of Bellingham, was again selected as Chairman of the Bellingham Community Chest at a meeting held in the Leopold Hotel in February. Mr. Hughes has been highly successful in this post, and has yet to see the Industrial Section of the Bellingham Fund fall below the quota assigned it.

### Ban On Lightweight Newsprint

Canada's Wartime Prices and Trade Board imposed a temporary ban February 29 on the manufacture of lightweight newsprint to prevent dislocation in the industry.

The prohibitory order, applying to newsprint lighter than the standard 32-pound per ream, sold to North American consumers, was to remain in effect until April 30.

Guy E. Holt, newsprint administrator for Canada, issued the order, stating there were numerous technical problems involved in any shift in production from 32 to 30-pound paper. He feared that any sudden changes in Canadian production would make serious administrative and production difficulties.

These difficulties might lead to the inability of Canada to discharge her commitment to supply 200,000 tons of newsprint per month to the United States during the first six months of this year, said Mr. Holt. Other markets might also be affected adversely by a change-over in production.

Mr. Holt added that it was also likely that inequities between consumers would arise unless more detailed production plans were worked out than have yet been possible.

### John F. Rhoades Joins Johnson and Wierk, Inc.

John F. Rhoades, chief engineer of The Mead Corporation, Chillicothe, Ohio, for the past 23 years, has recently joined Johnson and Wierk, Inc., consulting engineers for the pulp and paper industry, with offices at 415 Lexington Ave., New York 17, N. Y.

Mr. Rhoades' activities with The Mead Corporation included construction of several large pulp and paper mills and allied developments now owned by that corporation in United States and Canada.

Johnson and Wierk, Inc., was organized in 1929 as consulting engineers, specializing in the pulp and paper industry. The most recent project handled by this firm was the mill for Industrias Klabin do Parana, of Sao Paulo, Brazil. This mill, at Monte Alegre, when complete, will annually produce 48,000 tons of newsprint, 40,000 tons of bleached and unbleached sulphite pulp, and 30,000 tons of groundwood.

Mr. Rhoades made a journey to the Pacific Northwest on a TAPPI "special" train several years ago for a national meeting in Portland, Ore., when he met many leaders in the western industry. He recalled a tour of Weyerhaeuser timber holdings, viewing a tree-topping and other woods operations.

# Acid Making In the Sulphite Pulp Industry

by R. H. LUNDBERG\*

## CHAPTER II -- Continued

(This installment continues analyses of various raw acid and recovery plant arrangements).

### E. Flow Sheet No. 9

As noted a pressure tower installation has been added to the raw acid department. The operation and use of same was fully discussed under analysis of Flow Sheet No. 6. Direct cooling of the Burner gases was also fully discussed.

The main new feature of this layout is the high and low pressure accumulator arrangement in connection with a pressure absorption tower.

The operation is as follows: High pressure digester relief enters the high pressure accumulator (item 22) mixed with acid from low pressure accumulator (item 23). The low pressure digester relief and the vent gases from the high pressure accumulator enters the low pressure accumulator mixed with acid from the storage tank (item 11).

The vent gases from the low pressure accumulator enters the pressure absorption tower (item 20) meeting the acid from the acid pressure tower (item 15). The vent gases from the pressure absorption tower enters the gas holder (item 21) from where the gases are uniformly discharged into the burner gas stream.

This recovery system is about perfect. It permits production of a cooking acid of almost any strength and temperature within theoretical limits.

\*Seattle, Washington. Mr. Lundberg is Western Manager, G. D. Jensen Company, New York City.

### Absorption Calculations

Sulphur Consumption 250 lbs. per ton of pulp  
Sulphur losses 8 lbs. per ton of pulp  
Raw Acid requirements—

1500 U.S. Gals.=12500 lbs. per ton of pulp

Cooking Acid requirement—

2300 U.S. Gals.=19200 lbs. per ton of pulp

Burner Gas 17% SO<sub>2</sub> (Dry basis)

Temperature of tower water 77° F. (25° C.)

Temperature of cooking acid 176° F. (80° C.)

Temperature of low pressure acid 104° F. (40° C.)

Temperature of reclaiming tank acid 95° F. (35° C.)

High pressure accumulator pressure 44.1 lbs. G.P.

Low pressure accumulator pressure 14.7 lbs. G.P.

Pressure absorption tower pressure 10 lbs. G.P.

Digester relief gases contain 350 cu. ft. S.T.P. inert gases per ton of pulp.

Wanted: A cooking acid of highest possible per cent total SO<sub>2</sub> with 1.20% Comb. SO<sub>2</sub>.

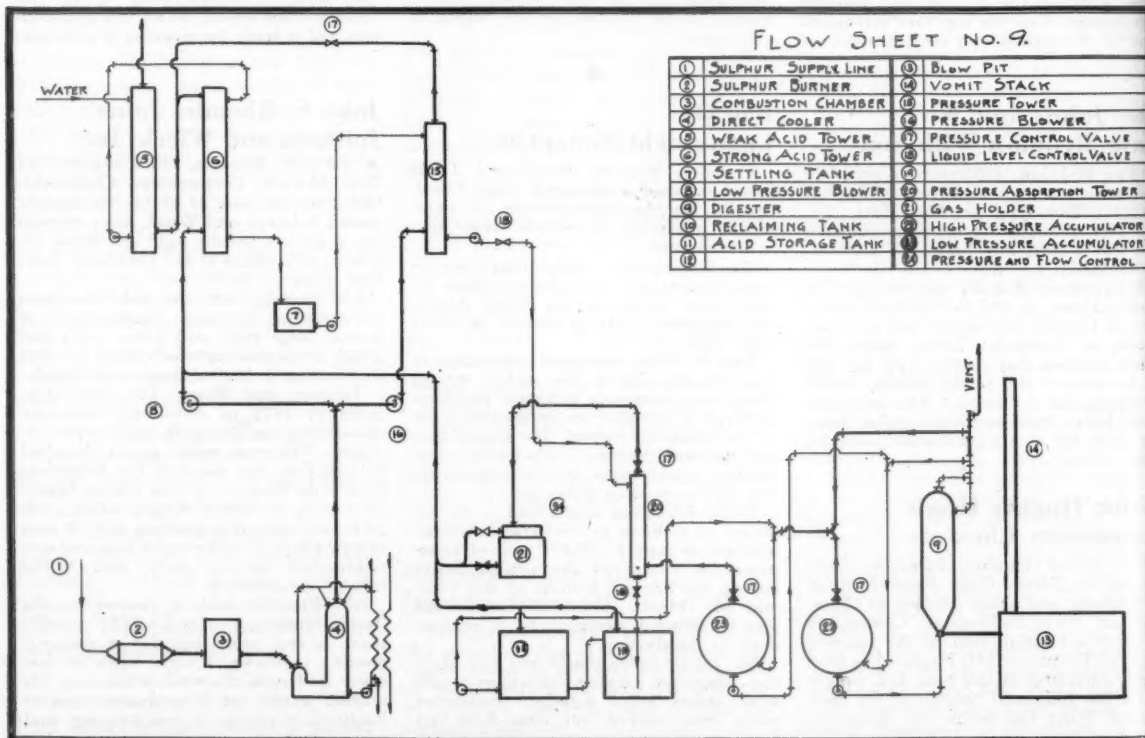
The maximum cooking acid strength at 176° F. and 4 atmospheres is (Chart XXXV)

7.75% Total SO<sub>2</sub>-1.20% Comb. SO<sub>2</sub> for a dry gas strength of 90% SO<sub>2</sub>.

The trial and error method is used and a cooking acid of 7.75% Total-1.20% Comb. SO<sub>2</sub> is assumed possible.

SO<sub>2</sub> in Cooking Acid 0.075 x 19200 = 1440 lbs.  
SO<sub>2</sub> consumed 484 lbs.

SO<sub>2</sub> in digester relief 956 lbs.





# BEAR BRAND

CHEMICALS FOR THE WESTERN PAPER INDUSTRY



Ammonia  
Caustic Soda  
Zinc Hydrosulphite  
Chlorine  
Sulphur Dioxide

GREAT WESTERN DIVISION  
THE DOW CHEMICAL COMPANY  
SAN FRANCISCO, CALIFORNIA

Seattle

Los Angeles



**DOW**

CHEMICALS INDISPENSABLE  
TO INDUSTRY AND VICTORY

Gases entering High Pressure Accumulator (dry basis)

SO<sub>2</sub> 956 x 5.6 = 5354 cu. ft. S.T.P.

Inert 350 cu. ft. S.T.P.

5704 cu. ft. S.T.P.

Gases leaving High Pressure Accumulator (Chart XXXV)

minimum SO<sub>2</sub> 85.5% (Dry basis)

Inert 14.5% (Dry basis)

Total gases leaving  $350 \div 0.145 = 2414$  cu. ft. S.T.P.

SO<sub>2</sub> leaving  $.855 \times 2414 = 2064$  cu. ft. S.T.P.

= 369 lbs. SO<sub>2</sub>.

SO<sub>2</sub> absorbed in High Pressure Accumulator 956—369 = 587 lbs. SO<sub>2</sub>. To satisfy the cooking and demand of 1440 lbs. SO<sub>2</sub> the acid pumped from the Low Pressure Accumulator to the High Pressure Accumulator must

## PACIFIC PULP & PAPER INDUSTRY

contain 1440—587=853 lbs. SO<sub>2</sub>. Thus testing 6.82% Total—1.65% Comb. SO<sub>2</sub>. Such an acid can be produced without difficulty in the Low Pressure Accumulator at 104° F. and 14.7 lbs. G.P. No solubility chart has been prepared for this temperature and pressure but the maximum acid strength for 85.5% dry SO<sub>2</sub> gas is 11.45% Total—1.65% Comb. SO<sub>2</sub>. The gases leaving the Low Pressure Accumulator will consist of

minimum SO<sub>2</sub> 37% (Dry basis)

Inert 63% (Dry basis)

Total gases leaving  $350 \div 0.63 = 556$  cu. ft. S.T.P.

SO<sub>2</sub> leaving  $0.37 \times 556 = 206$  cu. ft. S.T.P.

= 37 lbs. SO<sub>2</sub>.

SO<sub>2</sub> absorbed in Low Pressure Accumulator 369—37=332 lbs. SO<sub>2</sub>. To satisfy the Low Pressure Accumulator acid demand of 853 lbs. SO<sub>2</sub> the acid pumped

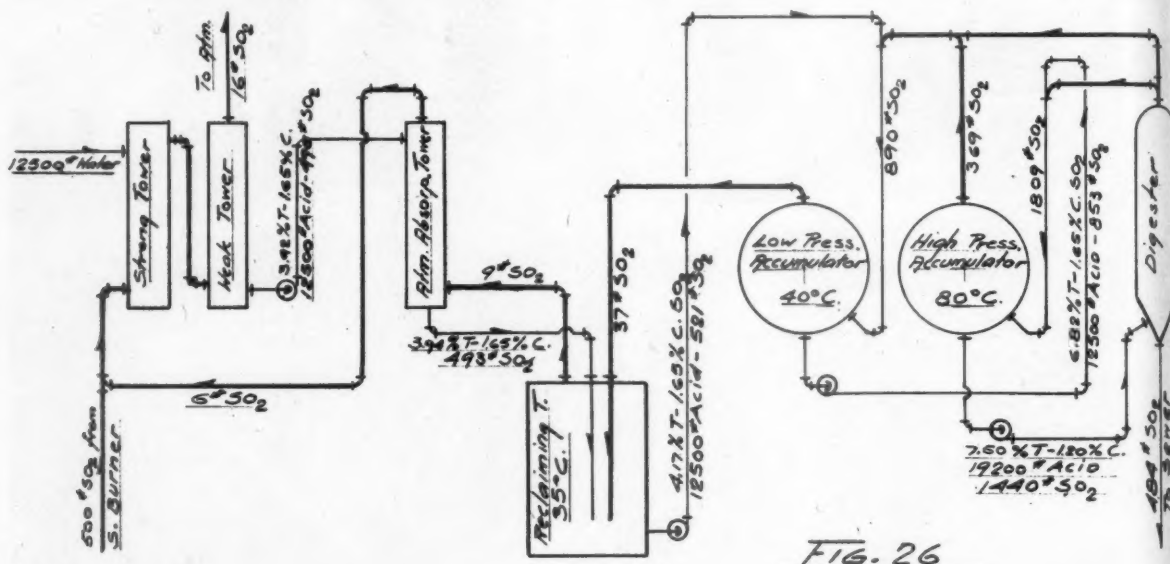


FIG. 26

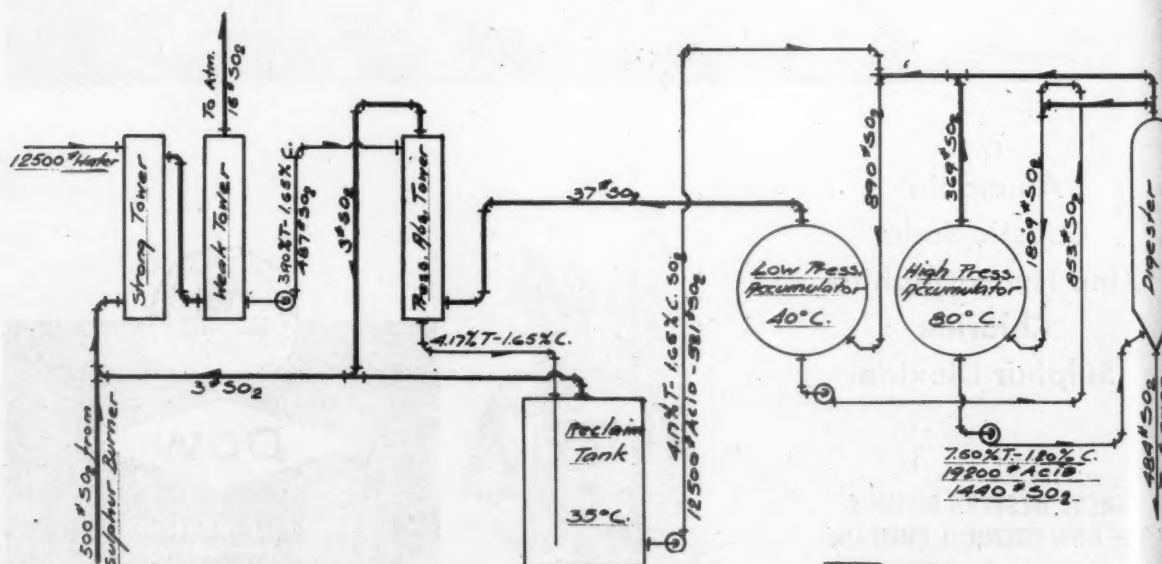


FIG. 27

6.82%  
e pro-  
cumu-  
chart  
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O<sub>2</sub> gas  
s leav-

into this accumulator must contain  $853 - 332 = 521$  lbs. SO<sub>2</sub>, thus testing 4.17% Total—1.65% Comb. SO<sub>2</sub>. Such an acid can readily be produced in the Pressure Absorption Tower. As a matter of fact, it can almost be produced directly in the stone towers.

Consequently, in this particular case the pressure absorption tower is only of slight value and absorption could satisfactorily be performed in a reclaiming tank or an atmospheric tower (see Fig. 26). Thus, the layout as per Flow Sheet No. 9 has ample absorption facilities to meet any emergency. It is, however, true that when using both a high and low pressure accumulator the low pressure digester relief must be started earlier on account of the higher pressure in the high pressure accumulator and thus some dilution of the acid in the low pressure accumulator takes place. The ultimate result should, however, be approximately the same as outlined above.

The operation of the digesters themselves is made easier by the use of the high and low pressure accumulator arrangement as any back pressure on the low pressure relief header is practically eliminated. The digester relief consists, by the time the low pressure relief lines have to be used, mostly of water vapor which condenses immediately when contacted by the storage acid in the low pressure accumulator drop leg.

### Urges 4,000 Men Return to Logging

● In a statement in favor of a bill in Congress to give draft deferment to pulpwood cutters, George R. Wallace, president of the Association of Pulp Consumers, Inc., said 4,000 additional men in Pacific Northwest woods would increase pulp production in the United States by 600,000 tons.

The members of the Association of Pulp Consumers, Inc., operate 260 paper and paperboard mills with annual capacity of 3,000,000 tons of paper and paperboard. They represent approximately 30% of the total paper and paperboard capacity of the U. S. and use less than 20% of the total wood pulp consumed in the production of paper and paperboard.

"A recent study," said Mr. Wallace's statement, "shows more than 95% of the paper and paperboard produced by the mills consuming purchased pulp is used directly in the war effort or essential civilian needs . . . some for army ration containers, military balloons, blueprint papers, bomb fins, bomb rings, cable insulation, camouflage paper, condensers, crepe cellulose wadding, dental mouth wadding, etc. . . ."

"In the years immediately preceding the war, the mills depending upon purchased wood pulp secured approximately 35 per cent of pulp supply from producers in European countries, 15% from Canada, 25% from market pulp mills located on the Pacific Northwest area and the balance of 25% from surplus pulp production of paper and paperboard mills in the central and eastern states which produce both pulp and paper.

"First major dislocation of their wood pulp supply was experienced Nov. 1, 1942, when the WPB issued order withholding logs from pulp mills in two major Pacific Northwest areas, closing several pulp mills and curtailing operations of others," said Mr. Wallace. "Remainder of pulp produced earmarked principally for nitrating, lend-lease and other non-paper uses.

"Coincident with the dislocations was a marked increase in demand for paper

and paperboard products which resulted in many of the mills that normally had a surplus which they sold to open market, using a larger percentage of their own wood pulp production and offering less for sale.

"Recent reports indicate that the amount of wood pulp available from Canada during 1944 will be approximately 14% less than the amount received during 1943, and early resumption of imports from Europe not likely. Only remaining source of supply for the mills depending on purchased wood pulp is the market pulp mills located principally in the Pacific Northwest which are either closed or operating on a curtailed basis. Those running are operating at about 60% capacity.

"Estimated present wood pulp production in the Pacific Northwest could be increased by 600,000 tons a year, a large portion of which could be available to mills producing paper and paperboard for national defense and essential civilian use. The problem of increasing pulpwood production in the Pacific Northwest resolves itself into one of manpower.

"To increase production of wood pulp in the Pacific Northwest requires additional men in the woods to cut pulpwood. The cutting of pulpwood is ordinarily combined with obtaining saw logs for lumber since it is not considered practical to log a stand of timber for pulpwood alone. Estimated average logging operation, approximately one-half of the time of the men is consumed in cutting logs for pulpwood and one-half cutting logs for lumber.

"Many men normally employed in timber and pulpwood operations are now engaged in other occupations and it is the purpose of this proposed legislation to make it possible for them to return to their former employment in the woods and to retain those who are now so employed.

"About 4,000 additional men in woods in the Pacific Northwest will produce sufficient additional pulpwood to reopen the pulp mills which are closed and increase the production of those which are now operating. In addition it will produce a large quantity of logs so urgently needed."

The result is a very low pressure to a partial vacuum in the low pressure relief lines, which is materially helpful in reducing the digester pressure before blowing, which in turn makes for better SO<sub>2</sub> relieving conditions and saving in sulphur.

Returning to the above absorption calculations it was found that the acid pumped to the low pressure accumulator must contain 521 lbs. SO<sub>2</sub> and test 4.17% Total—1.65% Comb. SO<sub>2</sub>.

Gases leaving the Pressure Absorption Tower:  
minimum SO<sub>2</sub> 4% (Dry basis) (Chart XIX -C)  
Inert 96% (Dry basis)

Total gases leaving  $350 \div 0.96 = 365$  cu. ft. S.T.P.  
SO<sub>2</sub> leaving  $0.04 \times 365 = 15$  cu. ft. S.T.P.  
 $= 3$  lbs. SO<sub>2</sub>.

SO<sub>2</sub> absorbed in Pressure Absorption Tower  $37 - 3 = 34$  lbs. To satisfy the low pressure accumulator acid demand of 521 lbs. SO<sub>2</sub> the raw acid pumped to this tower must contain  $521 - 34 = 487$  lbs., thus an acid testing 3.90% Total—1.65% Comb. SO<sub>2</sub> (see Fig. 27).

The importance of the recovery system has not been generally understood and consequently has not been given needed attention in many mills when, as a matter of fact, the recovery system is as important as the raw acid plant for successful acid making.

### Harold Foley Returns

Harold Foley, president of Powell River Co., returned to his Vancouver offices from an extended tour of the east and southern states during the first week in March.



THE SCOTT PAPER COMPANY, Chester, Pa., parent firm of Coos Bay Pulp Corporation of Empire, Ore., and Anacortes, Wash., has received a large order from the government calling for a small package of special tissue to be included in the U. S. Army's Ration K. Heretofore there had been no toilet tissue in these rations, and the new order shows the importance placed on toilet tissue for health and comfort.

Not much larger than a package of gum, the tissue is folded flat in a compact pack. It is of a light tan color, meeting army specifications for camouflage so it cannot be seen from the air. Breakfast, dinner and supper units comprise Ration K. Each package is about 7 by 3½ by 1½ inches, weighing slightly over 2 pounds. The toilet tissue is placed only in the supper unit. Individually wrapped food items are sealed in a moisture-vapor-resisting bag. This bag is placed within an inner carton, which is protected by a double wax dip and a double wax wrap. This is placed in an outside carton.

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## PASC Meeting Hears Paper Plastic Houses and Even Clothing Are Coming

● In opening its 1944 schedule of meetings, Papermakers and Associates of Southern California presented a program, with paper plastics as its principal theme. The dinner-meeting was held in the Rosslyn hotel, Los Angeles, February 17, with 51 members and guests present.

Carol Sachs, structures research engineer of Lockheed Aircraft Corp., Burbank, Calif., was guest speaker. Robert A. Baum was program chairman.

The second installment of "Current Events in the Paper Industry" was given by Frank Wheelock, and upheld the impression created by Richard Buckley at the December meeting—that this feature would prove to be of great value from the standpoint of factual information presented.

Mr. Wheelock, in realistic fashion, announced that the current situation in the industry was "about as blue a picture as can be imagined." He quoted a report from Washington, namely, "that savings be made through the use of waste materials and fillers and by encouraging and directing, wherever practicable, the production and use of lighter weights of paper."

He then referred to the announcement by the Canadian government to the effect that newsprint mills in that country will use 4 per cent waste, and that larger publishers and printers are having their consumption of paper reduced about 25 per cent below base period to save 1¼ million tons of paper.

Current paper production is down 9 per cent from 1941, Mr. Wheelock advised, and pulpwood cutting for the current four-month season is 25 per cent below the same period last year; whereas overseas shipments in cartons, containing a very large percentage of kraft paper, has doubled. The War Production Board paperboard division has recommended the manufacture of lightweight kraft boards and elimination of caliper requirements, which will bring about a saving of 30,000 tons of linerboard a year.

"A Swedish trade commission is said to have reached New York," he said, "and word comes from Swedish pulp suppliers which indicates extensive inventories of fodder pulp on hand that will be available to us—if, as and when."

### "Industrial Marriage"

● Mr. Sachs in his opening remarks termed the combination of various materials having complimentary properties to form composite structures as an "industrial marriage." Paper is playing a highly important part in this program, because of the high strength and comparatively low weight of cellulose fibers, and because of the tonnage which the industry is capable of producing.

He told his audience that paper fibers, when bonded by some type of resin into a board, possess excellent uniformity and, more important, "a tensile strength of 50,000 to 100,000 pounds per square inch."

Regarding future uses, Mr. Sachs predicted tremendous expansion of paper plastic products. Among these will be containers for food and other products. Paper plastic houses—and even clothing—are forthcoming, having proved their merit in extensive experiments. Consider-

able new and special equipment will be required to produce the multiplicity of new items already scheduled. Mr. Sachs' paper, "Industrial Marriage," appears elsewhere in this issue.

Chairman W. A. Kinney appointed a committee to nominate candidates, inasmuch as the election of new officers will occur at the next meeting, to be held the third Thursday in April. Members of this committee are: Robert A. Baum, chairman; Max E. Campbell, George E. Eberhart, Harry F. Lilburn and William C. Sheehan.

### Attendance

● Those present at the February 17 meeting of PASC follow (all of Los Angeles unless otherwise stated):

Floyd W. Adams, Los Angeles Paper Box Co.; Robt. A. Baum, Fernstrom Paper Mills, Inc., Pomona, Calif.; Charles J. Becker, Fibreboard Products Inc., Vernon, Calif.; William Bellemann, Pioneer-Flintkote Co.; Howard Bidwell, Pioneer-Flintkote Co.; Herman L. Berg, California-Oregon Paper Mills; Bruce F. Brown, Fibreboard Products Inc., Vernon, Calif.; Bruce Brown, Jr., Fibreboard Products Inc., Vernon, Calif.; Grover C. Brown, Pioneer-Flintkote Co.; Dick Buckley, Fernstrom Paper Mills Inc., Pomona, Calif.

Max E. Campbell, U. S. Gypsum Co.; Eugene Coons, Hollywood Film Exhibitors; Fred Croft, Pioneer-Flintkote Co.; George M. Cunningham, National Oil Products Co.; Frank E. Dilley, Pioneer-Flintkote Co.; Merle L. Dorman, California-Oregon Paper Mills; Ernest Dutcher, Pioneer-Flintkote Co.; George E. Eberhard, Fibreboard Products Inc., Vernon, Calif.; Asgar Eilersgaard, Pioneer-Flintkote Co.; Charles G. Frampton, Fernstrom Paper Mills, Inc., Pomona, Calif.; R. T. Gardner, Wallace & Tiernan Sales Corp.; Donald L. Hamler, California-Oregon Paper Mills; E. E. Harper, Research Engineer, Monrovia, Calif.; Mrs. E. E. Harper, Monrovia, Calif.; Ernest C. Hill, California-Oregon Paper Mills.

W. A. Kelly, The Waterbury Felt Co., Portland, Ore.; Ernie Kertz, John W. Bolton & Sons, Inc., Portland, Ore.; W. A. Kinney, Pioneer-Flintkote Co.; Glenn D. Klingaman, Pioneer-Flintkote Co.; Seymour J. Knowles, Pioneer-Flintkote Co.; Elmer A. Lemire, Pioneer-Flintkote Co.; Harry F. Lilburn, California-Oregon Paper Mills; Charles P. Linker, Stein Hall Mfg. Co.; Frank L. Mark, Western Asphalt Association; J. L. Meece, Pioneer-Flintkote Co.; William A. Moore, Pioneer-Flintkote Co.; W. J. O'Connell, Jr., Technical Consultants; Glenn A. Phillips, Pioneer-Flintkote Co.

Carol Sachs, Lockheed Aircraft Corp.; Otto Sass, Pioneer-Flintkote Co.; Lee Thompson, Pioneer-Flintkote Co.; James Turek, Jr., Stein-Hall Mfg. Co., San Francisco, Calif.; John Van Ounsem, Pioneer-Flintkote Co.; A. W. Ponsford, Pacific Pulp and Paper Industry; Guy Pulley, Pacific Pulp and Paper Industry; Robert P. Wagner, Pioneer-Flintkote Co.; Paul D. Waples, Pioneer-Flintkote Co.; O. Wernberg, Patch Wegner Corp., Long Island City, N. Y.; O. A. White, U. S. Maritime Commission; Frank H. Wheelock, Fibreboard Products Inc., and George Zenick, Pioneer-Flintkote Co.

### St. Regis to Open April 1

● The Kraft Pulp Division, St. Regis Paper Company, in Tacoma, Wash., is scheduled to reopen April 1 after a 17-month long shutdown, the kraft mill operating under the direction of Walter De Long, vice president.

All the clearances through the government agencies, particularly the Production Urgency Committee, have been received for the reopening of the mill.

A letter from the War Production Board, Pulp and Paper Division, Washington, D. C., to the company stated that full authority has been granted for the reopening.

The original order from the War Production Board relative to reopening the mill was to produce 50 per cent bleached and 50 per cent unbleached, but since the original order St. Regis Paper Company has been advised that they require all unbleached pulp from this mill. The plant will, therefore, start out on this basis, producing 275 tons daily, six days per week.

All of the old employees seem to be anxious and willing to return to their jobs. Mr. A. C. McCorry, previously with St. Regis at Tacoma, and Mr. James Ruck, recently resigned from Northern Kraft Company at Howland, Maine, will have complete charge of the mill. Mr. McCorry handling the cooking, washing and drying division and Mr. Ruck in charge of the recovery department. Mr. Herman Geevers will act in an advisory capacity to assist Mr. De Long in reopening the mill and in its operation. Mr. Geevers is retired at the present time but has a very enviable reputation as a man capable of producing the best product possible for a sulphate mill operation.

Acquisition by St. Regis of one of the biggest commercial stands of timber in Washington state was reported in previous issues. A perpetual wood supply was acquired in Lewis county by the company.

Logging operations are going along quite successfully. The company has lost practically no time this winter on account of snow and it is hoped that as weather permits it will be able to at least double production of logs. It is anticipated that logging from the West Fork Timber Company's holdings will amount to 60,000,000 feet of logs per year. This, with other smaller holdings should guarantee a raw material supply for this mill for an indefinite period. The company is looking forward to the acquisition of additional timber in order to assure this mill of a plentiful supply.

### Westinghouse Post

● Milo L. Tally, formerly of Seattle, has been named assistant to the application data manager for the Pacific Coast district, Westinghouse Electric & Manufacturing Co. Announcement of the appointment was made by H. S. Schuler of San Francisco, application data manager for the district. A native of Union County, Oregon, Mr. Tally received an engineering degree at Stanford in 1935 and joined Westinghouse a short time later.

## Rayonier's Machine Shop Crew at Port Angeles Shows Ingenuity in Producing Ships' Parts

● The machine shop of the Port Angeles, Wash., Division of Rayonier Incorporated has shown resourcefulness in making its own drawings and special gigs and doing other independent work in order to produce special ship parts in the war work program.

This was especially true in the production of a number of ship chocks. Ingenuity of the machine shop crew, working under Meder Johnson, resident engineer, also was evident in the milling of big universal joints and of valve operating gear parts for U. S. destroyers. Mr. Johnson, incidentally, is coordinator of the war work done in shops of five Olympic Peninsula mills.

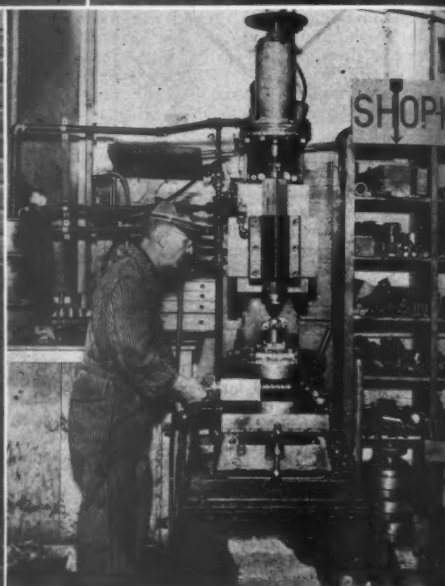
What has been done at Rayonier's mill in Port Angeles is typical of the ingenuity shown in many machine shops of the Pacific Coast pulp and paper industry, which are cooperating in the ambitious machine shop war work program begun nearly two years ago as an additional way of helping to win the war besides making essential pulp and paper.

### How Chocks Are Made

The chocks made at Rayonier Incorporated in Port Angeles are used on some ships the Puget Sound Bridge & Dredging Company is constructing for the Navy and are forged of  $\frac{1}{2}$ " steel plate. They are heavily ribbed internally and when completed give the appearance of a solid casting.

The forging was done on one of the pulp baling presses in the finishing room. They are pressed in two halves, then trimmed and welded together and reinforcing gussets installed; then the flat band is bent around the outer contour and welded in place; the welds are then ground smooth so that the ship's hawsers will not be chafed.

An accompanying picture shows Ed Wightman, one of the shop foremen, holding a 5" universal joint which was manufactured for the Chain Belt Company in San Francisco. This joint is milled from solid bar stock and is extremely large for this type of joint. Mr. Wightman figured out the setups for milling this joint which had to be somewhat special as only one was required. To produce various con-



### MACHINE SHOP WORK DONE AT PORT ANGELES DIVISION, RAYONIER CORPORATION:

Upper left: KEN HARRIS, welding a ship chock—a product of pulp mill machine ingenuity. Upper right: CHARLES RITTENHOUSE, Blacksmith Shop Foreman, ship chocks ready for shipment to the shipbuilders.

Lower left: ED WIGHTMAN, one of the Shop Foremen, holding a 5" universal joint milled on specially designed setups. Lower right: RAY SIEBEL cutting an inside for the valve operating gear of a destroyer. He is doing the work on a home-made hydraulic slotter.

tours approximately twelve separate milling operations had to be performed.

Another picture shows Ray Siebel operating the Rayonier mill's slotter. This is a home-made machine and was built to produce internal splines, tapered square holes and various internal contours required on the valve operating gear we are furnishing the Seattle-Tacoma Shipbuilding Corporation for use in their destroyers.

### Coos Bay Local Elects Officers

The International Brotherhood of Pulp Sulphite and Paper Mill Workers, Coos Bay Local No. 232, recently elected officers and appointed committee members for 1944. The new officers are: Leslie L. Sprogis, president; Harry L. Ward, vice president; Ely Weingart, secretary-treasurer; Howard Duffield, corresponding secretary; Robert Anglin, recording secretary; and Harold Spacht, guard.

J. Peterson, Urban Shrode, and Roy Cline will be trustees for the year. R. R. Brown, Leslie Sprogis and Vernon Thomas form the standing committee.



## B. C. Forest Industries Inquiry

British Columbia pulp and paper men are following with close interest the deliberations of the royal commission headed by Justice Gordon McG. Sloan into the forest industries.

The scope of the inquiry is broad. The commission will take evidence in all parts of the province under the following headings:

1. Extent, nature and value of the resource.
2. Conservation, management and protection of these resources.
3. Establishment of forest yield on a continuous production basis in perpetuity.
4. Reforestation and research.
5. Forestry education and instruction.
6. Utilization of the forest crop and its relationship to employment and social conditions.
7. Use and management of forest and wild lands for parks, recreation, grazing and wild life in relation to forest administration.
8. Relationship of the forest to soil conservation.
9. Maintenance of an adequate forest cover with a view to the regulation of moisture runoff and the maintenance of the levels of lakes and streams.
10. Forest finance and revenues to the crown from forest resources.
11. Acquisition of rights to forest lands and timber and tenure of such rights.
12. Legislation required.
13. Other relevant matters.

During the first few weeks of its operation the commission concentrated on the administration of the provincial forest service, but gradually other aspects in connection with the No. 1 natural resource of the west coast province will be dealt with, and it is probable that before the sessions are ended many spokesmen for the pulp and paper industry will be heard.

George O'Brien has been attending the sessions as special representative of Powell River Co. Other companies are indirectly represented. In view of the general objective of the commission, the pulp and paper industry has little to fear. If the commission recommends change in operating methods these will more likely affect the loggers rather than the manufacturers of pulp and paper.

Major L. R. Andrews made a plea for more active participation of the Dominion with the provincial governments in maintaining the national forest estate. He said that the losses from forest fire damage gave a direct ratio to the skill and money spent on patrol, detection and control during the forest fire season.

He drew a sharp contrast between the liberal public expenditures made for permanent improvements to open up and develop far, lands through roads, railways, irrigation and experimental farms, as against the meager aid given to the permanent development of forest lands. He said that probably \$10 of forest revenue, direct or indirect, was taken by Dominion taxation to each dollar received by the government of British Columbia. On the other hand, the provincial treasury returned one out of every three to four dollars of forest revenue to the welfare of the timberlands, whereas the Dominion invested virtually nothing at all in the task of perpetuating woodland resources.

During his testimony before the Sloan

commission in Victoria, Chief Forester C. D. Orchard said that "we are within sight of the total exhaustion of the mature Douglas fir stand on the coast," and emphasized the necessity of developing and marketing hemlock—a field in which the pulp and paper industry is particularly interested. He gave it as his opinion that if the hemlock situation was intelligently handled a program could be worked out for perpetuation of present production.

Mr. Orchard indicated that there would have to be a change in logging methods so as to provide fuller utilization of the forest crop. He claimed that about 60 per cent of timber is left after primary logging and virtually wasted in the form of stumps, branches and young trees.

"To put a forest on a sustained yield basis, the recognized method is to have working circles, which would in many cases consist of both crown and privately owned lands," he said. "The government or the private owners could operate these working circles. Either the government can go into the logging business and operate crown lands or allot crown lands to private owners to round out private working circles."

If the province is to support its present cut, all lands will have to be under management and some owners would have to be regulated, according to Mr. Orchard, who added: "We are permitting economic crimes on some lands where timber is being cut today. We are cutting young growth at the height of its vigor."

He also pointed out that if the government was going to encourage the practice of forestry in a practical way the annual taxation would have to be very modest, so as to encourage the preservation of young growth.

### With Pulp Prices Up, Papermakers Want More

● Manufacturers of a wide variety of papers who were affected by the price increases on several grades of sulphite and other pulps in mid-February are going to actively seek increases for themselves in endproduct prices, according to prominent leaders of the industry who were interviewed by a representative of PACIFIC PULP & PAPER INDUSTRY, now touring the east.

Individual companies which expect to find it difficult to absorb increased costs will take up their cases with the Office of Price Administration but manufacturers will not act as a group.

Wood pulp price increases ranging from \$2 to \$10 a ton on 4 grades of pulp—55 per cent of the amount sold to paper and board mills—were authorized by OPA to prevent serious losses by pulp manufacturers due to increased costs and to help sustain necessary output. These increases give \$12,500,000 more annually to producers, a difference of 11.7 per cent over previous ceilings, which had been unchanged for 3½ years.

Following are the increases and new ceilings, per short air dry ton, including delivery:

Groundwood pulp and standard newsprint side-runs, including imports from Canada, up \$5 a ton to \$50. An additional \$3 increase is granted for groundwood pulp that has been dried on paper machines. Groundwood screenings go up \$2 a ton to \$32.

Soda pulp, including imports from Canada, increased \$6 a ton to \$68 for unbleached and \$72 for bleached.

Bleached sulphite, increased \$10 a ton to \$86 for softwood and \$83.50 for hardwood; unbleached sulphite, \$8 a ton to \$74 for softwood and \$71.50 for hardwood; sulphite screenings, \$5 a ton to \$43.50.

According to information obtained by this magazine's representative in the east, the Canadians held the "whip hand" in getting pulp price increases, being outside U. S. jurisdiction and thus able to bargain. The price increases were made general for all regions, giving United States producers some relief from mounting costs, which they probably would not have been able to obtain themselves.

An OPA plan had been under consideration to give increases to all regions except the Pacific Coast but top OPA authorities at the eleventh hour, finally squelched this threat of discrimination.



PAUL KELLOGG, who has been acting as president of the Newsprint Association of Canada during the absence of Charles Vining, on government service, has been appointed to the new position of general manager with headquarters in Montreal.

Mr. Vining has resumed his post as president following two years of service as head of Canada's War Information Board and in other government work.

Mr. Kellogg made a tour of Canadian newsprint mills recently, conferring with pulp and paper executives.

In an interview with Pacific Pulp & Paper Industry's representative Mr. Kellogg said: "Our No. 1 problem in the east as well as in the west is manpower. If we had the men, we could produce the woodpulp, and woodpulp has been the bottleneck for more than a year."

### Hiday Dies

Howard Hiday, 56, employee of the Oregon Pulp and Paper Company, Salem, Oregon, where he acted as a police guard, died in a Salem hospital on February 3, after a brief illness.

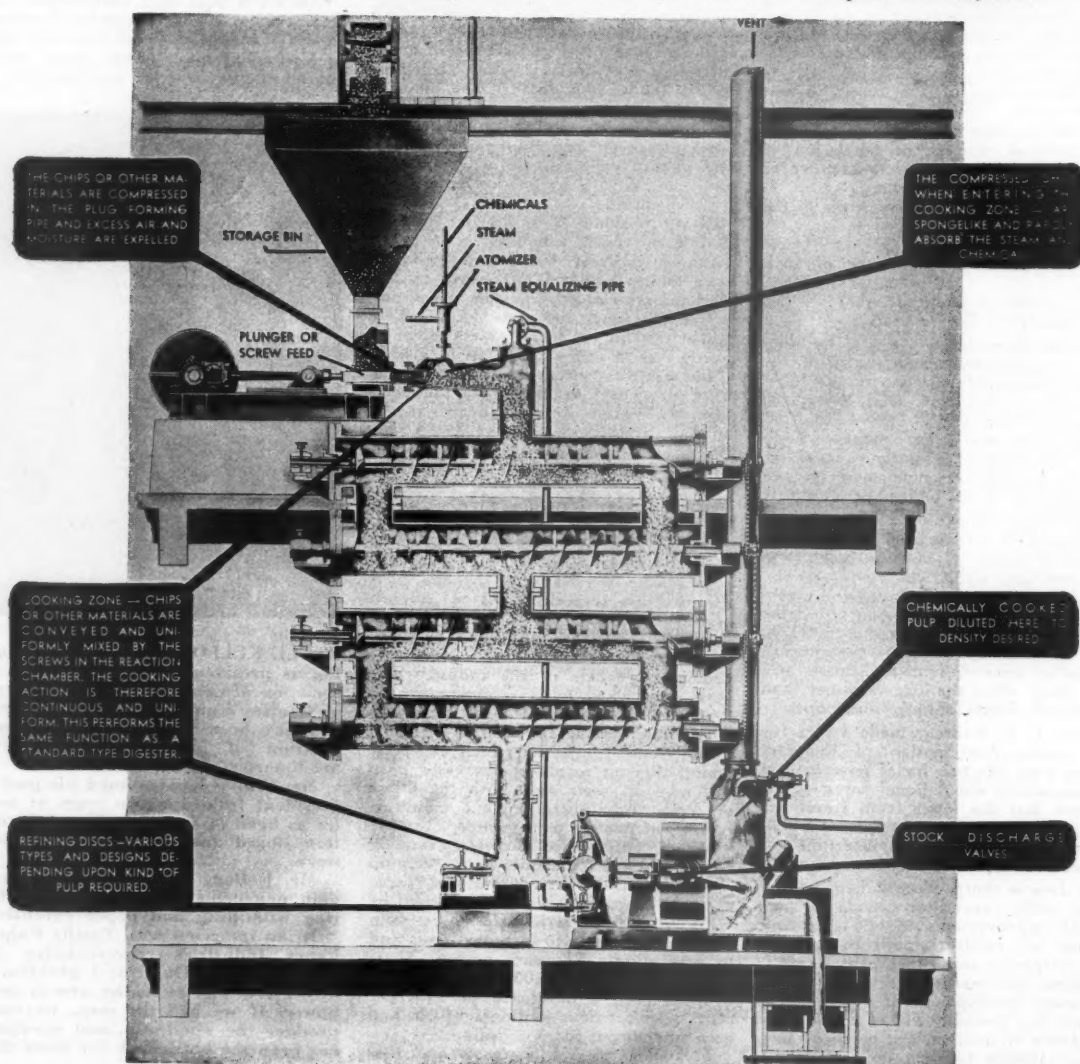
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*combining the* ASPLUND DEFIBRATOR  
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# The History and Romance of Paper

By F. R. SIEVERS\*

Groundwood Foreman,  
Camas, Wash. Division, Crown Zellerbach Corp.

## PART I

### From Stone Carvers to the Fourdrinier Brothers

• History of paper. Without paper few of us would know of history. Historians tell us that no one thing in all the world has had so far reaching effect in building civilization. No one thing that had been such an influence in helping the poor and the down trodden men to come out of virtual slavery to enjoy the better things of life.

Otherwise drab and dry historians become romantic on their discourse on the effect of paper on the civilizations of the world.

Six thousand nine hundred and forty two years ago, the poet, Homer, spoke these beautiful lines giving a word picture of the burial of a departing hero:

"The oxen mules in wagons straight they put,  
Went forth an unmeasured pile of Sylvan matter cut  
Nine days employed in carriage,  
But when the tenth morn shined on wretched mortal,  
Brought they the bravest of his kind forth to be burned,  
Upon the piles most height  
They laid the body and gave fire.  
All day it burned, all night  
And when the eleventh morn let on earth her rosy fingers shine,  
The people flocked about the pile,  
and first with gleaming wine,  
Quenched all the flames.  
His brothers, then, and friends  
the snowy bones gathered, in-  
to an urn of gold,  
Still pouring out their moans,  
Graved it, built up the grave with stones."

A beautiful picture in words, but at that time nothing to record it on.

So beautiful that for four thousand years it was preserved by word of mouth. Blind beggars recited these lines by roadsides to passing travelers to pay for alms. From generation to generation, for four thousand years those words of Homer lived in the minds of men. But only a few could hear and enjoy them.

At last it was written down. Now you and I, our children and our children's children can read, enjoy and in it find escape from the more



F. R. SIEVERS, Groundwood Foreman, Camas, Wash., Division, Crown Zellerbach Corporation, who prepared this history for presentation at the Crown Willamette Paper School.

mundane things of life. And it will live not for six thousand years, but many times six thousand years preserved, by paper.

True that man about this time, 5,000 B. C. or before, were writing by painting pictures on rocks, by carving pyramids of stone. The obelisks and monuments of ancient civilization all gave evidence of man's hunger to record his works and deeds for generations to come.

But all of this was so disconnected that learned archeologists of today have failed to decipher many of them.

### Mystery of Papyrus

• The Egyptians invented a picture writing called hieroglyphics which was possibly the most widely used of all methods. They used mortar of mud on which to write. When the writings were made the mud was baked, preserving it in a brick like form. But it was so crude and unwieldy it was useless but to a few.

The Chinese, a people of a natural high intelligence at about this time were using silk cloth, bamboo sticks and bamboo mats to write on.

All this writing and reading was confined to the ruling classes, the priests, the soothsayer, and those duly appointed by the kings. Common people such as you and I could talk, sing or whistle if it so pleased

our rulers, but we could not read or write.

Man continued his groping struggle for a power to express himself so that others coming after him could share his thoughts and aspirations.

The next landmark we learn of was a substance called papyrus. Our word paper was coined from the name of this product. It could be made into sheets. It could be carried from place to place. Historians tell us this was about the year 3500 B. C.

Papyrus is a tall reed like plant with a three cornered stem, found chiefly along the Nile in Egypt. It is filled with a solid pith. Even now, historians disagree as to what part of the plant was used. The majority state the pith of the plant was used by slicing it into strips laying them diagonally across each other then coating them with gelatinous substance. Some say this coating was formed by the water of the Nile and left deposited along the shores. Others claim that the coating was made of flour.

Other writers much in the minority claim the strips used for making papyrus were taken from the walls of the plant stock and the pith was used for food. The latter group belonged possibly to similar groups we know in life, those that would eat their pulp and have their paper too.

However, crude as this product was, man reached the point in his existence where he could have books, even libraries.

Books laborously written by hand because printing, that kindred art of paper, had not been invented. Books not as we know them, but long sheets of papyrus rolled on wooden or cane rollers. There was a roller attached to each end, you unrolled as you read and rolled up what you had read.

Many of these scrolls as they were called still exist. The Theban Book of the Lead, a roll 122 feet long and 21½ inches wide is in the British Museum today.

The skins of animals when properly treated have been used for writing purposes. Skins of goats, pigs, calves and sheep. They were called Charta Pergama.

We call it parchment and use some of it today. They always use it for college degrees. This kind is made of sheep skin. I like to think

\*Mr. Sievers prepared and presented this history at the Crown Willamette Paper School in Camas this year.



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Welded Hollow-steel Propeller Blades, representing the utmost in accuracy, dependability and welding technique.



Tests to destruction are a means of obtaining a positive and scientific check of the design and manufacture of Smith-welded vessels.



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Some people seem to think it is easy to make a pressure vessel. We don't!

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We don't! We never have.

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In our plant, one of the world's greatest steel-working plants, we have learned much about steel. Therefore, the steel that goes into A. O. Smith Pressure Vessels is produced to A. O. Smith specifications.

In our plant, one of the world's greatest welding plants, we have learned much about welding. Therefore, we developed our own welding processes—even to the point of making our own electrodes.

And step by step we tested! In our own metallurgical and physical testing laboratories we proved each minute point in the process. We made pressure vessels for ourselves that we might test them to destruction!

Then and only then did we know! Thus we established the pedigree by which you can judge pressure vessel value and buy with assurance.

BUY MORE WAR BONDS!

ELECTRIC-WELDED



PRESSURE VESSEL

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this custom started when some poor college professor thought of what would happen to his charges when they went out into the world. He could not tell them, but gave them a sheep skin as a hint, you know that old saying, "as sheep they were turned to the slaughter."

The products of these ancient systems cannot be considered as paper, but show the struggle of man to climb to a higher plane of existence.

### Chinese Papermaking

● The Chinese were the first to actually produce paper. This happened about the year 123 B. C. But they were tied down with an alphabet that took a life time to learn to read and write, so they were never able to realize the universal boon in education and knowledge it proved to be to the rest of the world.

Did you ever think on an Arab as anything but as a near bandit with a dark swarthy skin, riding a swift horse and robbing anyone he could? Well, the Arabs brought the manufacture of paper from its obscurity in China to start its real use in the world. In the early part of the seventh century, the Arabs in a thieving raid on China captured several slaves adept at paper making. History tells us of the first mill was established at Samarkand in 704 A. D.

Keen of mind, the Arabs made the most of the paper making art. They made paper of cotton and linen fibres. Some of their paper made from linen fibre was so fine and smooth, it was called silk paper.

They wrote books, established libraries, universities and schools. In 970 A. D. there were twenty seven schools of which we have record that were built for the education of the poor.

Quoting from Thatcher & Schwel's History of Europe, "in medicine they made great advances over the Greeks. They studied physiology and hygiene and their *Materia Medica* was practically the same as ours today. Many surgeons understood the use of anesthetics and performed some of the most difficult operations known. This at a time when in Europe all practice of medicine was forbidden by the church. They discovered new substances such as alcohol, potash, nitrate of silver, corrosive sublimate and nitric and sulphuric acid. They worked in all metals, gold, silver, copper, bronze, iron and steel. In textile fabrics they have never been surpassed. They learned the value of fertilizer and adapted their crops

to the ground. They introduced into the west many trees and plants from the east and wrote scientific treatise on farming."

These are part of the things these historians tell us of Arabs of that time. They end up their summary with these lines, "One item in this account must be underlined here, because this advance in the intellectual life of mankind was due almost wholly to the manufacture and use of paper."

Paper made by hand. The fibres beaten up in mortars. The pulp mixed with water in vats. The sheet formed on a small screen made of fibres of plants or hair dipped into the vats and lifted out letting the water run from the fibres. The fibres retained on the screen formed the wet sheet of paper. This wet sheet was pressed between woolen felts, hung on sticks to dry, and rubbed with a hard smooth stone or some such substance to give it a finish. This paper so laboriously made had created a new world.

For nearly five hundred years they kept their processes secret. But due to political and social changes, the manufacture fell into disrepute and the Arabian people started into decline.

### First Mills In Europe

● The process was introduced into Spain by the Moors, another bunch of marauders in about the eleventh century A. D. From Spain the secrets of the process were carried to Italy, thence to France and there to the Netherlands.

The first paper mill was erected in Germany about 1336 by Ullman Stromer, a merchant. He had his workmen, mostly Italians, sworn to secrecy, a bond they broke and he had them thrown into jail. Evidently this caused them to repent for they returned to work and swore renewed faithfulness and he continued in operation until 1407.

From Germany the art was carried to Switzerland from there to Holland. The Dutch in Holland being a methodical people became famous for the quality of their paper. An interesting sidelight is that our Declaration of Independence was first written on Dutch paper.

Due to an uprising in France a number of French makers migrated to England. By their help the first paper mill was established in England about 1496 A. D.

Up to this time little change had been made in the manufacture except that water powered stamping mills had been replaced by the hand beating of fibres to make them into

pulp. Also, water marking of paper originating in Germany about 1356 A. D. Water marks were made by weaving the design into the screen on which the wet sheet is formed. A pulp film when wet is very susceptible to marking. The design only stands out clearly when the paper is held to the light and does in no way interfere with the printing. The water mark has been a great help to historians in tracing the origin of certain papers.

Paper making did not flourish in England. We learn of the first mill and then nothing more until about 1588 when Spelman, a German, started again to manufacture paper there. When the Huguenots were driven from France in the late part of the 17th century they went to England. Among them were many able paper makers. The manufacture of paper in England would be little worth mentioning if it were not for these refugees and their descendants whom she took in. They were the pioneers of the modern manufacture of paper. The most notable of these were the Fourdrinier brothers who invented and built a machine in the early part of the eighteenth century, that would make a continuous sheet of paper. All of our paper machines at Camas are Fourdrinier machines named from these two French refugees.

*(To be concluded next month)*

### Jobs for All

Canada's pulp and paper industry is prepared to play a major role in post-war reconstruction just as it has during the war years. E. Howard Smith, retiring president of the Canadian Pulp & Paper Association, stated at the annual meeting of the association in Montreal.

Jobs for all, Mr. Smith said, is the keynote of Canada's post-war success, and if the peace treaties do not seriously interfere with its regular market the pulp and paper industry will be able to continue the maintenance of a high rate of employment.

"If our industry were to spend 10 per cent of its 1939 invested capital on betterment in the few years following the war, it would amount to be about \$60,000,000," said Mr. Smith.

### Hooker Appoints Coey To Sales Development Dept.

The Hooker Electrochemical Company announces the appointment of John S. Coey to its Sales Development Department with headquarters at Niagara Falls, New York. Mr. Coey is a graduate in chemistry from Amherst College. For the past seven years he has been in the Manufacturing Department of the Company at its Niagara Falls, New York plant, where he was in charge of the Process Study Group engaged in the improvement of processes, operating efficiencies, and quality of products.

# The Subtractive Effect of Dyeing Paper

By ED. H. NUNN\*

Technical Supervisor, West Linn, Ore. Division of Crown  
Zellerbach Corporation.

Suppose we have a grade of blue paper that we want to make a little greener. The obvious thing to do is to add some green dye, but this may be entirely the wrong procedure.

The color may also be thrown to the green side by taking out or subtracting complementary red components. This is what we mean by the subtractive effect and its application will produce brighter, cleaner colors than the more commonly used method of keeping on adding dyes until the approximate desired shade is reached.

This is not a new idea, by any means. A great deal of excellent work has been done on the problem of color measurement, and so many papers have been published on this subject, that it is impossible here to give credit to all of them.

Many of these articles, however, involve some pretty complicated mathematical treatments and often include the use of such terms as spectral energy distribution, photoelectric tristimulus colorimetry, chromaticity departure, excitation purity and specular reflectivity, until finally the practical papermaker begins to wonder how he is going to use this information in the everyday problems of matching colors.

The purpose of this discussion, then, is to present in simple non-technical language, some of the principles of color measurement, particularly to show how reflectance curves can be a valuable tool in color control, especially in applying the subtractive effect.

To develop this subject properly, we will first consider some elementary ideas of color and color combinations—more or less common knowledge, but which must be understood to follow this discussion.

## Color Appreciation

Humans have five physical senses, touch, taste, hearing, smell and sight. Many sensations please us, and many others offend us. Few people have really acute perception in all five senses as, for example, in judging a fine wine, distinguishing costly perfumes, or having what is known as "an ear for music."

Appreciation of color, however, is nearly universal, and with exception of certain combinations, colors are all pleasing, and enjoyed by all ages, to the youngest child who first learns to express himself with his paints and crayons.

All of us derive some pleasure from a glowing sunset, the delicate tints of a rose, the radiant brilliance of a tuberose begonia or the rich tones of a color movie. The general use of lipstick and cosmetics is perhaps one of the best indications of man's response to color.

So color plays an important and necessary part in our everyday activities. Which is another way of saying that color is one of the most important qualities of paper, especially in regard to its sales appeal, or customer acceptance.

## What Is Color?

Color is a stimulus of certain nerves by pressure of light received by the eye. This pressure effect can be imitated by tapping the eyeball in total darkness, when flashes of light will be seen.

There is no color unless an eye is present to perceive it. An uninhabited tropical island is devoid of any color, any fragrance of flowers, or sound of the surf, because there is no eye, nose or ear there to register these impressions.

Light is usually considered as a wave motion and the wavelength is the distance from the crest of one wave to the crest of the next. Each color in the rainbow has its own wavelength, short in the violet and blue to long waves in the orange and red.

This explains why the sky is blue. As sunlight enters the earth's atmosphere, it meets many small dust particles. The longer red waves flow around these particles while the short blue waves are reflected to the eye, making the sky appear blue. As the sun sets, however, the longer light waves reach the eye while the short blue waves are scattered and reflected away, hence the color of the sunset progresses from yellow to orange to deep red, in the order of increasing wavelength.

## Complementary Colors

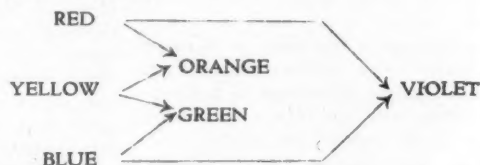
White light can be broken up into its constituent colors by means of a prism, giving us the spectrum, or, more familiarly,

the rainbow. The colors occur in the following order: VIOLET—BLUE—GREEN—YELLOW—ORANGE—RED.

It can be seen that green results from an overlapping or mixing of blue and yellow, and orange from a combination of yellow and red.

Thus all colors can be made from suitable combinations of red, yellow and blue, hence these are known as the three primary colors.

Secondary colors are made by combining the primary colors in pairs as follows:



The complementary of any primary color is the secondary color produced by adding the other two primaries, thus—

Primary Color	Complementary Color
Red	Yellow plus blue equals green.
Yellow	Red plus blue equals violet.
Blue	Red plus yellow equals orange.

This works backwards, too. For example, the complementary of green is red.

## Why Does Paper Appear Colored?

A sheet of blue paper illuminated by white light appears blue to the eye because it absorbs most of the complementary yellow and red, reflecting blue.

If the paper absorbs only red, reflecting both yellow and blue, it appears green.

The effect of adding a dye, then, is to produce absorption of its complementary. This is important.

Color of paper is commonly judged by comparing it with standard samples. While, in the final analysis, there is no substitute for visual inspection (because after all that is the way the customer or ultimate consumer will judge it) for purposes of mill control, it is desirable to have at hand some instrument that will numerically define color.

While only 4% of our population is actually color blind, colors are not judged exactly the same by different people. For example, most people will choose a blue white as being brighter than a cream white of equal brilliance.

Also, sample standards will fade, with the danger of gradually drifting away from standard shades as originally established.

So it is reassuring to have, by instrument measurement, a curve accurately defining a certain shade, unchanging and free from the personal element. Such curves are known as reflectance curves.

## Reflectance Curves

Suppose, as shown in Fig. 1, we illuminate a sample of red paper with a white light. We know that white light is composed of the various colors of the spectrum, and that the paper will selectively absorb some of these colors.

Furthermore, we have learned that the paper actually appears red because it absorbs the complementary green.

Our problem, then, is to determine how much of each color this paper will reflect.

Suppose we insert a red filter, as shown, and illuminate the paper with red light only. We can measure the amount of red light reflected by means of a photoelectric cell, or electric eye. Suppose we represent the amount of red light reflected by the length of the line A-B, on a suitable scale.

If we remove the red filter, and substitute an orange filter, we can measure the amount of orange light reflected, as shown by the line C-D.

If we repeat this for all colors, then join the tops of each vertical line we will have what is known as a reflectance curve, showing the amount of each colored light reflected, hence

\*Paper delivered at Pacific Section, TAPPI, in Everett, Wash., Feb. 1, 1944.



# *Suggestion* FROM **HOOKER**

Low brightness ceilings have eliminated some worries in Multi-stage bleaching. The bleaching time is shorter and greater production or savings in steam are possible. However, at lower brightness values, dirt is a real problem!



## TO KEEP DIRT CONTENT OF BLEACHED PULP AT A MINIMUM:

Reduce the proportion of Chlorine used in the Chlorination stage. When the brightness standard is lowered, it is not necessary to force the Chlorination. Keep the proportion of Chlorine in the hypochlorite stage relatively high. This is especially true in the case of sulfite pulps.

This suggestion is made to stimulate study and investigation, with more efficient production as a result.

The history of the Hooker Electrochemical Company is closely related to the Pulp and Paper Industry. During our entire experience, one of our aims has been to make outstanding pulp and paper chemicals, and to help the Pulp and Paper Industry to the extent that our knowledge and research permit.

Let us add our experience to yours in these times when efficient production is vital. For assistance or technical advice on problems of a chemical nature, write Dept. PP3.

BLEACHING POWDER • CAUSTIC SODA  
CHLORINATED PARAFFIN • CHLORINE  
MURIATIC ACID • SODIUM SULFIDE

**MORE BONDS  
FOR MORE BOMBERS**

**HOOKER ELECTROCHEMICAL COMPANY**  
NIAGARA FALLS, N. Y.  
NEW YORK, N. Y. • TACOMA, WASH. • WILMINGTON, CALIF.

# HOOKER CHEMICALS



accurately defining the color characteristics of the sample in question.

In this case, the reflectance curve shows a dip in the green, hence the sample must be red and all samples of similar shape will also be red.

#### Adding Various Dyes To Paper

A couple of years ago some interesting work was done at West Linn by adding various amounts of dyes to groundwood handsheets and plotting the corresponding reflectance curves. Examination of some of these will illustrate the general principles of coloring paper with dyes.

They will illustrate, for example, that the reflectance curve cannot be raised at any point by adding dye. There is a popular misconception that if a curve is low in the blue, to add some more blue dye and bring it up. This cannot be done. The curve can only be brought up in the blue by subtracting complementary orange components.

Fig. 2 shows the effect of adding increasing amounts of Methylene Blue to groundwood. There is practically no change in the blue region, but, since this is a greenish blue dye, pronounced absorption occurs in the red.

Fig. 3 shows that red Safranine dye does not change the curve in the red, but lowers it in the complementary green region. Likewise Auramine, in Fig. 4, being an orange yellow on

groundwood, produces absorption in the blue.

Fig. 5 shows the reflectance curve for Paper Blue R. The complementary of blue is yellow plus red, or orange. However, this is a reddish blue dye, that is considerable red is reflected along with the blue, hence less red is absorbed and the effect is shifted toward the yellow.

In interpreting reflectance curves, then, this principle must be understood, that addition of dye has only one effect—reducing brilliance in the region of its complementary color.

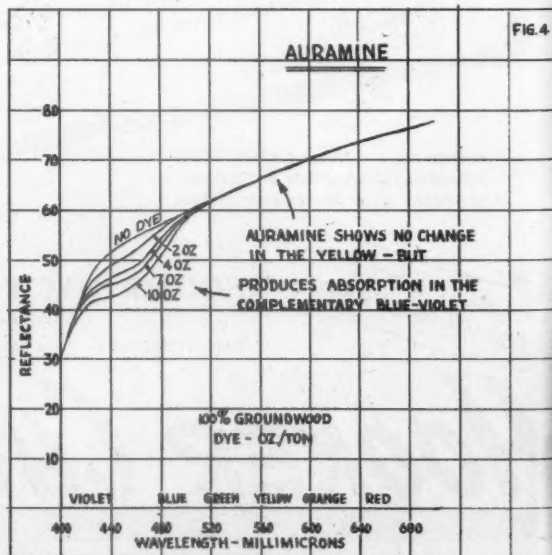
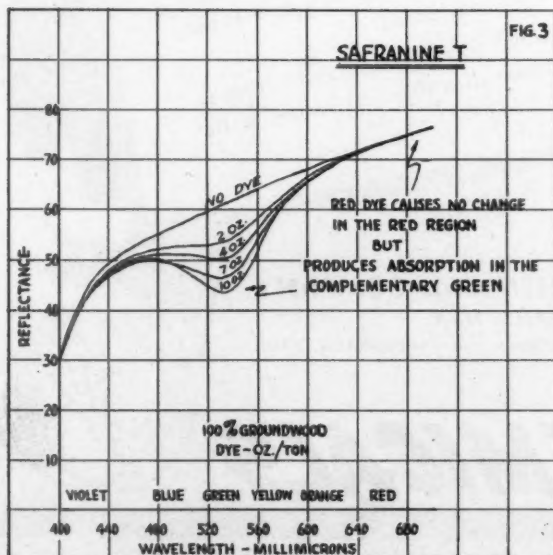
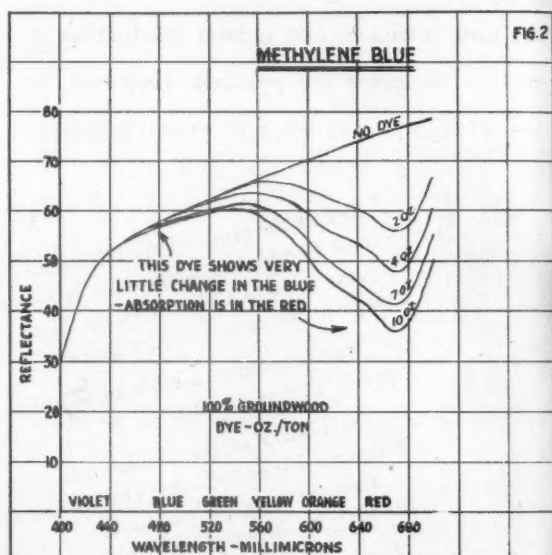
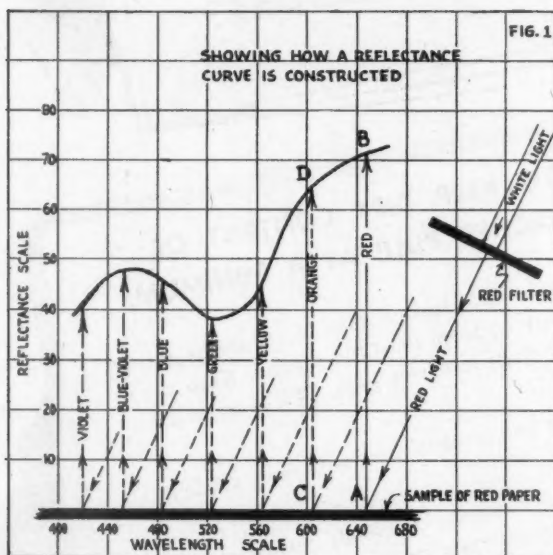
#### Dulling Effects

Since dyes work by absorption of complementaries, the addition of red, yellow and blue in suitable proportions produces a gray and the more dye added, the darker the gray.

This is an extremely important point. The presence of all three primary colors in a color formula will produce a gray-ing, or dulling effect, sometimes to a considerable extent.

For example, suppose we have a yellow sheet that needs a touch of red. We might select Rhodamine, a good strong red, but this would be a poor choice, because Rhodamine is a bluish red. In other words all three primary colors, red, yellow and blue, would be present. A close match for shade would be obtained, but the sheet would be dull.

A better choice would be Safranine, which does not have the bluish tone of Rhodamine. A match for shade would like-



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FIG.2

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# Strength

HERE IS  
**PAUL BUNYAN**

AND

**BABE**  
**THE PURPLE OX**

*What a Pair!*

... BABE WAS SEVEN AXE  
HANDLES AND A PLUG OF  
TOBACCO WIDE BETWEEN THE  
EYES! THEIR FEATS OF  
STRENGTH WHEN LOGGING  
THE NORTH-WEST ARE STILL  
TOLD WHEN THREE OR MORE  
LOGGERS GET TOGETHER ...

The strength of Powell River unbleached  
sulphite pulp is known to pulp users  
throughout the world.

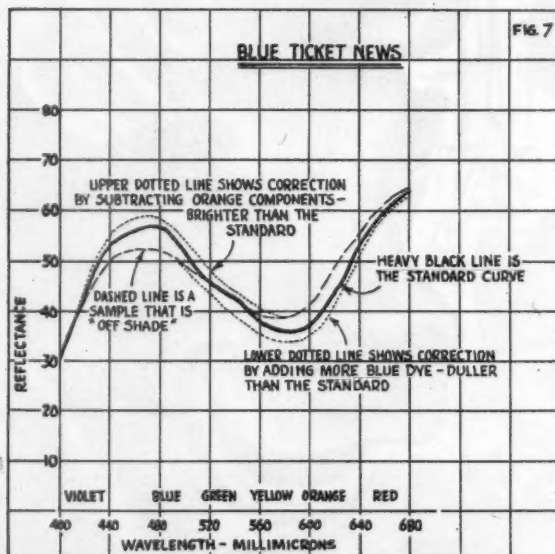
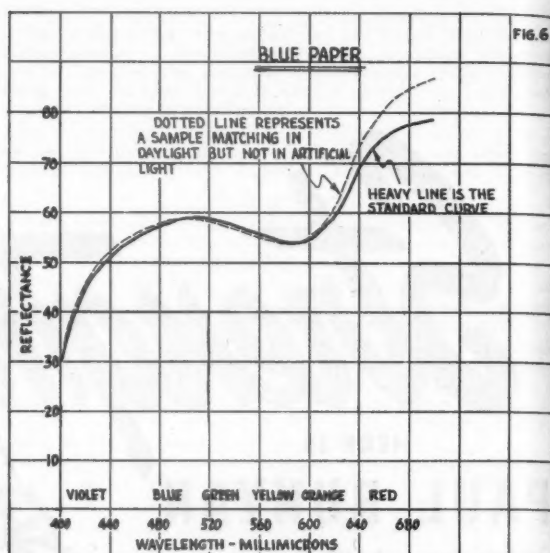
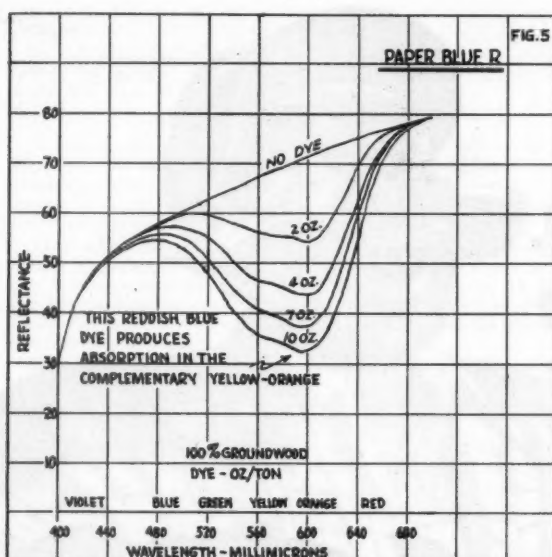


**POWELL RIVER UNBLEACHED SULPHITE PULP**  
**POWELL RIVER COMPANY LIMITED**

HEAD OFFICE: VANCOUVER, B. C.

MILLS: POWELL RIVER, B. C.





wise be obtained, only this time the color would be cleaner, with more snap and brilliance.

Another example will illustrate this point. A pink or red sheet should not be thrown to the blue with Methylene Blue. Since Methylene Blue has a greenish tone, that is it has a yellow component, all three primaries will be present and dulling will result. Better to use Methyl or Ethyl Violet, which are reddish blues.

#### Effect of Illumination

It is well known that some colors match in blue daylight but are away off when viewed under artificial, or tungsten light, which contains a higher proportion of red rays. Such a case is shown in Fig. 6.

Since the two curves shown coincide in the blue region, they

will match exactly in daylight, but the dotted curve, reflecting more red than the solid curve, will appear much redder in tungsten light, or under white fluorescent illumination (blue fluorescents act more like daylight).

However, if two curves coincide, or are closely parallel, across the entire spectrum then they must, and will, match under all kinds of illumination.

#### The Subtractive Method of Correction

The question now is—how are we going to use these ideas to most effectively correct a color curve that is off standard. This is best illustrated by an actual example.

The heavy black line in Fig. 7 represents the standard curve for a grade of Blue Ticket News. The dashed line represents a curve for an off shade sample—in this case off enough to be apparent to the eye, too red and not blue enough.

Adding more blue dye would make the sheet bluer by reducing reflectance in the complementary orange, as shown by the lower dotted line. This lower curve is approximately parallel to the standard curve, hence is a fair match. However, it is lower on the scale than the standard and therefore distinctly duller.

By applying the subtractive procedure we can take out orange or red components, as for example by substituting Methylene Blue for part of a redder blue present, which will raise the curve in the blue region as indicated by the upper dotted line. Again we have a curve reasonably parallel to the standard, indicating a commercial match, but brighter, and requiring less dye. This brighter curve is now actually an improvement over the original standard.

#### Need For More Study

The foregoing ideas are of immediate practical importance. All paper mills should have some instrument capable of yielding reflectance curves of reasonable accuracy, and in fact most mills already have such equipment.

However, too frequently not enough attention is given to properly analyzing reflectance curves. It is still all too common practice to find mills matching shades, particularly mixed colors like greens and browns, by process of keeping on adding one dye or another until some approach to a match is obtained.

A more careful application of the subtractive principles herein developed, by first attempting color correction by taking out complementary shades, is a much better approach, and certainly any procedure that will improve quality with lower cost, is well worth further study.

#### Calco Ad Manager

● The Calco Chemical Division, American Cyanamid Company, has announced the promotion of Robert Collyer to the post of advertising manager.

A member of a family that has been engaged in railroading for many years, he was in the traffic and advertising departments of the Delaware, Lackawanna and Western for many years.

#### Plastics Future

"The Research Viewpoint," a publication, polled readers on what they thought would be the industries contributing most to progress in the next decade. Results: Aviation and radio and electronics, 90 votes each; plastics, 187; housing, 50; alloys and metallurgy and food processing, 43 each.

#### Cancell Visits Mill

Benton Cancell, assistant to Harold Boeschstein, director of the Pulp and Paper Division, War Production Board, Washington, D. C., was a recent visitor at the Pulp Division Weyerhaeuser Timber Co., Longview, Washington.

FIG. 6

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# PAPER Put it There!

EVERY FIGHTING PLANE in the sky started on paper. Thousands of pounds of drafting and blue print paper are used in the designing of every model.

Paper goes into the plane itself—into laminated wing flaps, fin tips, seats, steps, panels; for filters in its engines; for charts in its control devices; for practice bombs; for the vital maps that guide it to its target.

Thus the paper industry continues to make an ever increasing contribution to the growth of America's Air Armada.



**F. C. HUYCK & SONS**  
*Kenwood Mills*  
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F. C. Huyck & Sons is proud to be serving an industry so essential to the war program. Our skill, our facilities and our 72 years of experience are always available in solving the special felt problems created by urgent wartime paper needs.

Pacific Coast Representatives: Pacific Coast Supply Co., Public Service Bldg., Portland, Ore.; 343 Sansome St., San Francisco, Calif.

# Paper-Plastic Products

By CARROL C. SACHS\*

## Introduction

During the past ten years we have frequently observed the combination of various materials having complementary properties to form composite structures in what might henceforth be termed an "industrial marriage." Plastics and synthetic resins have been a party to such a wedding and have been coupled with other materials in various technical applications. Among these are included metal, wood, wood flour, textile fabrics, cotton, rubber, leather and asbestos and cellulosic papers.

Metals have been extensively used with plastics where the mechanical strength or electrical conductivity of metals are supplemented by the ease of fabrication, low specific gravity, electrical insulating qualities, color, chemical resistance or attractive appearance of one of the plastics. Terminal strips and electrical switches, camera parts and bottle closures are common examples. A less apparent application is the inclusion of a thin sheet of metallic copper just under the surface of plastic laminates such as are used on table or bar tops. The metal serves to distribute and dissipate heat resulting from an accidental contact with a burning cigarette or match, thereby avoiding blistering, disfiguration and destruction of the panel. Again, the high thermal conductivity of the metal augments the deficiency of the plastic in this particular property, while the latter contributes to the appearance, corrosion resistance, warmth and general utility.

The important idea conveyed in the above illustrations in regards to plastics is this: plastics possess engineering properties (mechanical, chemical, electrical) which are frequently not obtainable in other materials. However, the practical and intelligent adaption of plastics to technical and industrial use is frequently best accomplished by emphasizing the advantageous properties and reinforcing the deficient properties through the inclusion of a second material possessing those qualities.

Although examples of products composed of plastics and an appreciable amount of paper are not as frequent as with metals, they are by no means lacking. This is principally

due to neglect on the part of both the resin manufacture and the paper converter to "get together" and to understand each other's technical problems, (1) the plastic industry and its many varied and intricate chemical problems of research, production and control, and (2) the paper industry with its innumerable problems of preparation, pulp suspension, pumping, filtration, drying,



CARROL C. SACHS, Structures Research Engineer, Lockheed Aircraft Corp., Burbank, Calif.

and converting. The resin manufacturer is not cognizant of the tremendous volume of water which is handled in even a small paper mill, the dilute nature of the pulp suspensions and the difficulties encountered in attempting to recirculate the water and operate such a plant as a closed system as would be necessary when using comparatively expensive synthetic resin.

Paper base plastic laminates constitute about 10 per cent of the entire laminate output, most of which is based upon a phenolic resin binder. Paper base laminates are frequently used as electrical insulators where insulation values must be combined with greater mechanical strength than can be obtained in textile fabric laminates. A relatively small amount of alpha cellulose paper is used annually to serve as surface sheets for decorative laminates. The soft, absorbent alpha stock can be impregnated to a high resin content which assures a lustrous, continuous film of resin which squeezes from the surface sheet during the pressing operation. The addition of 1-3% melamine or urea formaldehyde resin to the beater stock results in a paper having high wet strength suitable for use as photographic de-

veloping papers, photostats, etc. Some such papers are notably stronger in tension when wet than when dry. A product known as "Rodgers Board" has been manufactured by the Bakelite Corporation for several years. This is composed of phenolic resin impregnated pulp which is principally consumed in the molding industry as preforms which have been cut to shape on a punch press. Sizeable quantities of both synthetic resin adhesives and thermoplastic heat sealing films have been used in the assembly and sealing of paper bags, containers and in the coating of industrial adhesive and masking tapes.

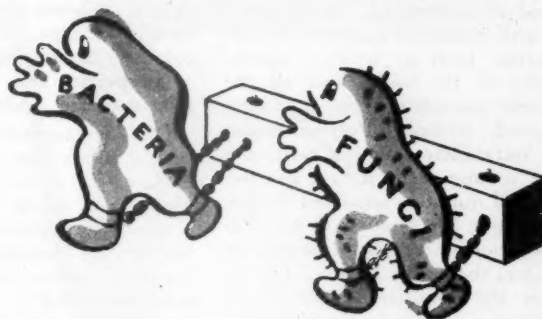
While the above list is impressive, those in the paper industry, whether producer or converter, realize that the aggregate tonnage involved is very small as regards to the normal tonnage of the paper industry. The amount becomes inconsequential when one considers the statement "the total tonnage of paper produced in the United States during the year 1943-1944 exceeds the combined total of steel and all other metals." The dollar outlook, however, is not quite so black. Most plastic paper products now on the market are valued at one to two dollars per pound, twenty to forty times the value of converted paper products which do not contain plastics.

The following paragraphs are prepared in an effort to assist the paper converting industry in visualizing the types of plastics and resins which are available and the methods by which they might be combined with paper fibers to produce new products having marketable properties.

**POLYMERIZATION** is the spinal column of the plastics industry and before digressing too far will be defined and illustrated. Polymer is a molecule made up by a particular recurring molecular structural unit. The original molecules or monomer of a plastic hook up together end to end to form giant molecules, like box cars in a long train or like the repeating pattern of wall paper. This "hooking-up" process constitutes polymerization. The product is known as a high polymer or commonly as a plastic. And if a polymer is a train of box cars, a co-polymer is a mixed freight, a long train in which box cars and tank cars are alternated or a freight train in which every 3rd or 30th

\*Structures Research Engineer, Lockheed Aircraft Corp., Burbank, Calif. Paper presented at the February, 1944, PASC meeting in Los Angeles, Calif.





... Stops Damage by Fungi and Bacteria  
... Helps Solve Paper Shortage

EVERY step to increase production is a move toward solving America's paper shortage. And Santobrite, Monsanto's highly effective fungicide and bactericide, helps keep paper mills humming by making troublesome microorganisms inactive.

The use of Santobrite controls slime, fungi and bacteria which cause slime spots, breaks, blinded wires, plugged felts, dirty stock, clogged water lines, rotted felts, and which create many other obstacles to good mill operation.

The use of 0.1 to 1 pound of Santobrite per ton of pulp or paper produced, usually gives protection. The amount needed will depend upon the extent to which your whitewater system is closed, the quality of your water supply and the characteristics of your stock. The cost of Santobrite treatment ranges from 1½ to 18

cents per ton of pulp or paper produced. No expensive equipment is needed for the application of Santobrite, which is available either as powder or briquettes.

Santobrite is chemically stable, non-corrosive to metals, non-volatile, practically odorless and, when handled properly, its use is no hazard to health of mill workers nor those who use the mill's products.

*Limited amounts of Santobrite are available on priority for continuous anti-slime treatment.*

Your request, by letter or wire, will bring you the latest information on availability. Complete technical information on Santobrite and its uses will be mailed promptly upon receipt of the coupon printed below. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, St. Louis 4, Missouri.



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CHEMICALS**

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or 300th car is a tank car. Most synthetic rubbers are co-polymers of two or more ingredients mixed in such proportions as to give them the desired characteristics. Many materials with structural qualities are also polymers, such as leather, starch, muscles of the body, and all the cellulose materials such as cotton and wood. Although Polymerization is an unfamiliar chemical term, the action is common in nature and the structural qualities imparted by polymerization are familiar to all. Polymerization increases viscosity, or decreases the ability to flow. For instance, the familiar Lucite in its monometric state is a liquid resembling gasoline except for its characteristic sweet odor. When polymerized, it first becomes about as viscous as glycerine. Further polymerization converts it into a thick syrup and finally into a glass-like solid. In most cases, much of the polymerization will have taken place in the plastic materials purchased by the paper converter before shipment occurs. Nevertheless a thorough knowledge of the phenomena of polymerization will be required to un-

derstand and control the further conversion of the resin and in analyzing the situation when trouble occurs. In addition to the group of natural polymers named above, at least four types of synthetic high polymers possessing a wide variety of properties and converting characteristics are available.

(1) Thermoplastics—are polymers which satisfy the general form of A-X, where the A stands for some group such as the vinyl group and X stands for a group such as a chloride or an acetate. Thermoplastic materials soften when heated and must be cooled in order to harden. Since they are fusible, they may be processed to recover any scrap. The limitation, of course, is the relatively low top operating temperature. Most thermoplastics now manufactured have a softening or thermal stress release temperature from 160-200 degrees F. Thermoplastics are notably soluble in a variety of solvents, even in the fully polymerized state. Thermoplastics polymerize by addition and no other products are given off as the polymerization proceeds.

(2) Thermohardening Resins—resemble thermoplastics in that they polymerize by addition, but the final product is said to be cross linked in character. They respond to the same catalysts used in the polymerization of thermoplastics, namely—benzoyl peroxide, lauroyl peroxide, hydrogen peroxide, etc. They differ from the thermoplastics in being heat stable to above 280 degrees F. and the polymerized product is insoluble in all common solvents. Examples include diallyl phthalate, divinyl benzene, tetra allyl silicate, allyl methacrylate and diallyl carbonate. Two valuable families of resins belonging to this group are the Columbia Resins (CR-) and the Muskat (MR-) series. The Bakelite Corporation produces a styrene derivative belonging to this group identified as XV-16631. "Laminac," a product of the American Cyanamid Corp., reported to styrene diglycomaleate (petrex), is characteristic of the group and satisfies the group formula, A-X-B. This family is known as the contact pressure laminating resins. No other products result from curing other than the polymer.

(3) Thermosetting Resins—This group of resins are known as condensation products in as much as some small molecule such as water, ammonia, or hydrogen chloride gas is condensed off during the polymerization. The water or other molecule is said to be "split out" during the polymerization. Most thermo-

setting resins may be cured by heating, either with or without the addition of an accelerator. The cured resin is both insoluble in solvents and infusible when heated. They may, however, in certain instances be replasticized by heating to a substantially higher temperature than at which the resin was previously cured. This, reforming of fully cured laminates may be accomplished. Belonging to this group are the phenolics (Bakelite type), ureas, melamines, furanes, etc. As received, the materials are in the "B" stage and upon curing are said to go to the "C" stage.

(5) Interpolymers: Copolymers in which one polymer is thermoplastic and the other is thermosetting constitute and interpolymers. The nature and properties of an interpolymers are not readily predictable, although it can be assumed that the material would plasticize (soften and flow) at elevated temperatures to a greater degree than ordinary thermosetting materials. The presence of thermoplastic might also serve to increase the impact strength and this should be evidenced by the presence of less brittleness than is usually found in unplasticized thermosetting resins. The thermoplastic phase constitutes an internal plasticizer which will not volatilize away or separate. It is stated that the copolymerization is represented by the formula A-X-B-Y, in which the constituents can be present from 99 to 1 or 1 to 99 parts. Presumably the presence of considerable thermoplastic would reflect in the properties of the product in increased solubility and decreased rigidity.

#### Available In Various Forms

The resins described above may be obtained in various forms for incorporation into paper products. The first type is the resin in solvent solution.

(1) Solvent solution: Synthetic resins in solvent solution are useful as adhesives (for bonding), impregnating agents and as lacquer coatings. In the preparation of laminating stock, rolls of paper are impregnated with "B" stage phenolic resin in a solvent, dried and rewound. These are cut into sheets as required, stacked and pressed. The uniform, continuous nature of paper makes it particularly adaptable for continuous impregnation and coating which in turn contributes to economical processing.

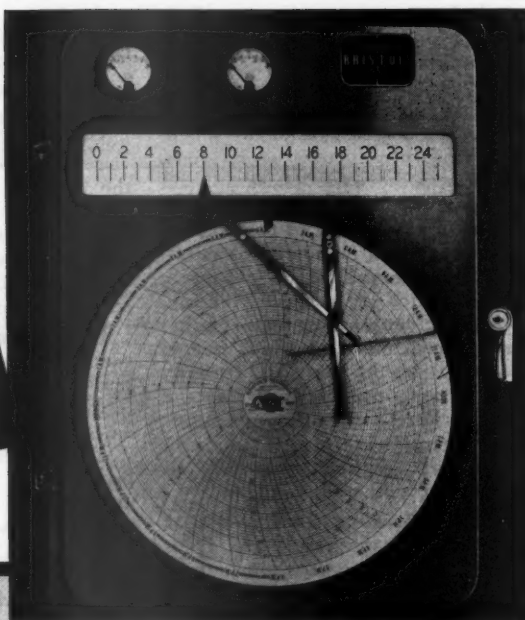
(2) Emulsions: The paper trade is already well experienced in the application of asphalt emulsions to pulp products, hence water emulsions of synthetic resins will be par-



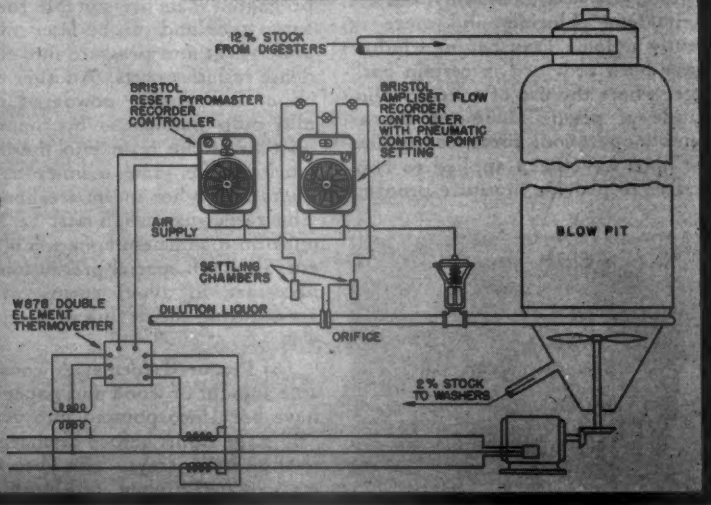
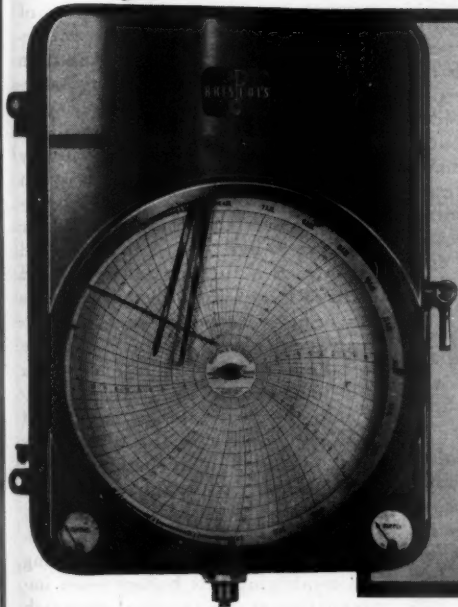
PAUL C. STAAKE, whose appointment as Representative of Bulkley, Dunton Pulp Co., Inc., has been announced by FRED ENDERS, President of the Company. Mr. Staaake's headquarters in Chicago are at 80 East Jackson Boulevard.

As partner in the Staaake-Schoonmaker Advertising Agency in Kalamazoo, Mich., for eleven years, he handled advertising or promotion for the Kalamazoo Vegetable Parchment Co., the Sutherland Paper Co., The Allied Paper Mills, the Rex Paper Co. and the Bryant Paper Co. Born in Grand Rapids, Mich., Mr. Staaake was graduated from Kalamazoo College in 1921. He did post graduate work at the University of Chicago. He is married and has two sons, one in the Army Air Corps and the other in the Navy.

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PRODUCE CONSTANT OUT-  
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Rate of flow of dilution liquor through the control valve is subject to two variables: variations in level in black liquor storage tank, affecting upstream pressure; variations in head of pulp in the blow pit, affecting downstream pressure.

To protect against the several possible dangerous conditions resulting from high consistency stock, Bristol Instruments have been installed, operating as follows:

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to changes in motor load (caused by changes in consistency of stock from digester) and sets control point on flow controller to a higher or lower value.

This application of Bristol Instruments should be attractive to any sulphate pulp mill planning a modernization program.

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ticularly important since little change in equipment or re-education of personnel would be required. Since very dilute pulp concentration must be used (3-5%) in order to obtain proper suspension of the fibers, the introduction of synthetic resins into the water phase appears probably the most feasible approach where tonnage would be contemplated. This would eliminate the necessity for large volumes of expensive solvents such as benzene, toluene, xylol, cyclohexanone, methyl ethyl ketone, etc., much of which out of necessity would be lost through evaporation or discharged into the sewers. Recent advances in emulsifying agents have made it possible to emulsify, without exception, all synthetic resins studied to date.

(3) **Heat sealing films:** Most of the thermoplastic resins are available and have been used in the form of heat sealing films. Common materials are cellulose acetate, cellulose nitrate, ethyl cellulose, vinyl butyral, vinylidene chloride, and more recently nylon. Transparent windows have been provided in certain packages where the use of a heat sealing grade of plastic facilitated the assembly operation. Heat sealing plastic films have been applied to book covers to provide moisture proofing

and add to the appearance. Paper bags and other containers have been similarly sealed or assembled.

(4) **Adhesives:** Special adhesives and impregnating resins which do not carry a solvent are applied as viscous syrups either with or without the addition of an accelerator and are generally cured by heating. Both thermohardening and thermosetting resins may be thus applied to paper products. Solvent adhesives are listed above under (1).

(5) **Powdered resins:** Since the advent of tower drying, many thermosetting resins are available in the form of dry "B" stage powders. These may be dusted onto dry pulp stock of very low weight (5-15 lbs./cu. ft.) and the resin distributed by placing a vibrator on the moving conveyor. The powdered resin is then sintered to the fibers by passing under a bank of infra red lamps which softens the resin and fuses it to the fiber. Such impregnated mats are suitable for preform stock and can be later molded under heat and pressure into tough, dense resinous parts. Another method of introducing powdered resins into pulp products is by the introduction of the resin into the beater much in the same manner as clay fillers and other inerts are handled. The resin suspension will be fairly uniform if sufficient agitation is present, although special precautions are necessary to avoid curing of the resin during the drying of the paper web.

(6) **Prepared forms:** A considerable amount of wood and paper fiber have been incorporated into viscous "B" stage resins before discharge into the casting trays. The fiber filled mass is then broken into lumps and ball milled to suitable particle size for use as molding powder for the plastics molding industry. Some such compounds consist of as much as 80% filler by weight.

#### Why Cellulose Fibers?

The reasons why more and more cellulose filled resinous products will be seen on tomorrow's market are clear cut. First, the tonnage which the paper industry can produce is tremendous. This means that paper will be available for such products. Paper fibers possess excellent uniformity and more important, a tensile strength of from 50,000-100,000 pounds per square inch. This strength is favorable to the strength of mild steel in tension. Of course, the individual fibers must be bonded together to produce some type of resin bonded board in order to re-

alize this valuable engineering property. The general rule that minimizing the number and temperature of processing operations results in less cellulose degradation should be followed in preparing paper stock for maximum mechanical strength. This does not, however, mean that the picture is not excellent for the cheaper grades of waste paper. Many applications do not require great strength nor mechanical considerations. The great toughness and natural resiliency of paper and pulp products are properties which make these materials even more attractive from the standpoint of use as fillers in plastic products.

#### Deficiencies of Cellulose Fibers

Synthetic resins frequently suppress or destroy the most derisible qualities of the paper fiber. Most important among the deficiencies of cellulose fillers is the ease of dehydration during curing of the resin in the case of thermosetting materials. Great fiber brittleness is generally the result. Thus, potentially strong laminates fail prematurely due to low impact strength when subject to a blow or to sharp bending. The tendency of the cellulosic fiber to re-hydrate when immersed in water is a further deficiency and leads to dimensional instability. This has been overcome in part by treating paper or pulp products with the so called "resin forming mix" which is of low viscosity and diffuses readily into the fiber later to react both with itself and with the fiber structure. The result is better dimensional stability although, again, this is gained at the cost of great brittleness. One should look to the pretreatment of paper with plasticizing and modifying oils before resin impregnation as one practical approach to both problems, dimensional instability around moisture and fiber embrittlement.

#### Chemical Cellulose

The increasing use of cellulose derived from the paper industry as a starting material for further synthesis should not be overlooked. One of the important outgrowths of the present war has been the perfection of paper making processes which deliver cellulose of suitable alpha content, and cleanliness, and consistency as to be suitable for nitration into cellulose nitrate for explosives. Cellulose nitrate of suitable molecular weight is also an excellent plastic although it is somewhat deficient in that it is inflammable. However, related cellulose compounds including methyl cellulose



**WILLIAM J. F. FRANCIS**, who recently joined the Technical Service Department, Pennsylvania Salt Manufacturing Company, Tacoma, Wash., as assistant to **BRIAN SHERA**, Service Engineer in matters relating to chlorine in water purification and caustic soda in the pulp and paper industry of the Northwest.

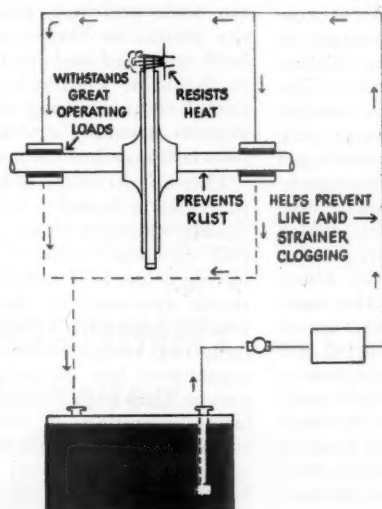
Mr. FRANCIS, graduate in science, University of California, 1936, took graduate work in 1937 and from 1937 to 1943 was Entomologist with the California Spray-Chemical Corporation.



# STANDARD ENGINEERS NOTEBOOK

## Rust-inhibited turbine oils solve many maintenance problems

Full protection against rapid deterioration of turbine oil charges and assurance against rusting turbine parts, may now be obtained by specifying Calol Deturbo 19X.



Developed for double reduction geared steam or land turbines, Calol Deturbo 19X is a product of carefully segregated crude, manufactured to perfect its natural ability to separate rapidly from water with a minimum of sludge formation, and especially compounded to protect all metal surfaces from corrosion - particularly the delicate moving parts of the governor.

Calol Deturbo 19X has a viscosity of approximately SAE 30. It has been officially approved by the United States Navy.

## Heavy, slow-speed loads require special lubrication



Diagrams show unequal load in oil film in bearing at start (left) in final operating positions (right).

Where extreme pressures are placed upon slow-speed bearings and enclosed reduction gears viscous, tacky lubricants such as Calol Vistac Oils are recommended. Calol Vistac Oils, in four grades, have unusual ability to remain on bearing surfaces and to resist film breakdown. Thus a smaller quantity is required to maintain an efficient oil film.

## Compounded Paint Thinner for better penetration

Because of excellent penetrating qualities, Standard Compounded Paint Thinner assures firmer adherence of paint to all surfaces, thus providing a strong foundation for succeeding coats. It evaporates completely, leaving only the preserving oils and color of the paint. It is not to be used for thinning lacquer. Like turpentine, Standard Compounded Paint Thinner will not "burn" or impair the life of paint.

which is suitable for use in adhesives and ink (being water soluble), cellulose acetate, ethyl cellulose, and benzyl cellulose are potentially large outlets after the war for purified paper cellulose. Indeed, most of these resins need just such an impetus, being more or less fixed in price partially dependent upon the high starting cost of cotton cellulose. Cellulose by itself exhibits interesting ion exchange properties which will be useful in water purification, the de-ionization of salt water, the concentration of vitamins from brewers yeast waste water, etc.

### You Can Expect

Present indications are that the greatest progress will be made in the plastic field not in terms of new synthetics, but in the slight modification of natural products (like paper cellulose). One of the important modifying materials will be products now considered as wastes in the petroleum industry. Further motion will be seen in the greater use of chemical cellulose and in modified lignin, both of which will be made suitable for recombining with paper fibers to yield plastic products and structures. Certainly the waste materials like lignin (40,000,000 pounds dumped daily) and similar petroleum by-products will figure heavily in any tonnage programs which will be undertaken by the paper industry during the next few years. This appears necessarily so except in engineering products since there is little evidence that the base price of most synthetic resins will change much in the next decade. The fact is that most paper applications will not economically support the inclusion of 30% by weight of synthetic resin at present prices. Many useful pulp products are possible at present through the surfacing of air blown asphalt impregnated stock with more expensive synthetic resins. Such products are both inexpensive and resistant to impact shocks.

### Future Applications

Future uses to which paper-plastic products will be applied will be dictated as in the past by human need. Food, clothing and shelter will remain paramount. Paper-plastic containers for food and other products will continue and design ingenuity will expand this outlet. One manufacturer has already completed plans for the mass products of paper-plastic shirts which will be discarded after one wearing. These are to retail at five cents each. Long fibered kraft and jute modified papers will be used for this application, while similar items such as overcoats,

hats, trousers, aprons, etc., are certainly within the realm of imagination.

The problem of incorporating large amounts of paper and/or pulp into major portions of tomorrow's house structure is already receiving serious consideration. Suitably combined with the proper amount and kind of resin, units which are prefabricated and ready for installation are possible. This problem has two major approaches (1) Double skin corrugation and (2) Sandwich structure. The first approach is through the production of paper corrugations of wall height and approximately three inches thick. Such corrugations would be of the "flat" type and would be assembled with suitable synthetic resin adhesives to two inner and outer skins which serve as inner and outer wall. All parts of such a wall are designed for continuous production, the corrugation, the outer and inner skin. All are ideal paper making procedures. The Sandwich type of structure consists of say three inches of paper pulp having a density of 5-10 pounds per cubic foot, suitably resin impregnated and bonded to dense impregnated paper skins on either side which serve as walls. The pulp core is similar to that produced by filling a pulp chest and draining the water from the bottom without the use of pressure. When properly dried and resin impregnated, the pulp core is very light and provides suitable bulk and stabilizing support for the inner and outer walls to prevent bucking when the structure is loaded in compression. Both the double skinned corrugation and the sandwich type structure can be given an endless variety of surface appearance by varying the type and color of surface sheet which is bonded to the outermost faces of the walls.

Products molded from filtration preformed resin impregnated pulp will continue to gain in popularity, the chief problem being that of obtaining even pulp deposits on the walls and the bottom of such preforms. The preform is later densified under heat and pressure. Should the pulp distribution problem be solved, the wide application of this type of preform to the molding of household equipment such as cabinets, furniture and sinks would be practical.

### Additional New Equipment Required

Depending upon the particular product to be produced, some or all of the following equipment will be required to combine paper with plas-

tics and to process same. First, impregnation equipment similar to the asphalt coating of roofing paper and rag felt rug stock, except for the addition of a solvent recovery system and closer heat control will be required where items of laminated nature are to be produced. Then converting equipment including forming rolls, dies, etc., suitable for producing corrugated shapes, channels, etc., for building purposes will be required. Modification of spiral winders to accommodate for heat curing or cooling of impregnated tubing stock will offer further outlet for paper-plastic combinations. The molded and filtration preformed paper charges is accomplished in hydraulic presses of 75-600-ton capacity, depending upon the area and depth of the piece to be fabricated. Probably the best outlet for such preforms; however, is to the plastics molding trade who are both equipped and have experience in the field. Hydraulic presses are useful for laminating and for subsequent assembly operations where heat curing adhesives are employed.

One of the most important unit processes in forming, curing and assembly of paper-plastic products is that of heat transfer in materials having a low heat transfer. A more recent approach to the subject of heating materials which are essentially heat insulators is through the capacitance loss of dielectric materials at ultra high frequency. Oscillators operating at 10-50 million cycles have been perfected and are available in sizes from 1/2 to 600 KW. Take the operation of drying the water from a gravity filtered pulp mat three inches in thickness such as might be used for a sandwich structure core. Normal conduction heating would require from 8-18 hours in a drying oven equipped for good air circulation. Drying with a high frequency oscillator is accomplished in 5-15 minutes, thus making the operation practical. Radio frequency heating generates heat from the center of the pulp mass outwards, just the opposite of conduction heating where the heating proceeds from the outer faces inward. The combined use of capacitance and conduction heating results in nearly uniform heating throughout the entire thickness. The curing of synthetic resin impregnating agents is likewise possible by RF methods. Capacitance heating likewise lends itself to heat sealing plastic films, the application of intense localized heat and the "stitching" of various thermoplastic films and fabrics.



### Immediate Trends

A constant increase in the quantity of paper-plastic materials going into specialized engineering applications is assured. This is especially true where a premium can be paid for properties which are not otherwise obtainable in other materials. As a building material for houses, cabinets, sinks and household equipment the trend is entirely dependent upon a decrease in the cost of synthetic resins or in the development of slightly modified natural materials and paper making waste products which are suitable for recombination with paper and pulp. The first such products will be based upon pulp impregnated with an emulsion or a hot dip of air blown asphalt. A second coating of synthetic resin could be applied by spraying or dipping to provide a waterproof surface and add to the general appearance of the panel. In general, about 30-40% by weight of impregnating resin or asphalt is required for laminated molded parts. In addition, small amounts of plasticizer and lubricating agents are frequently compounded into the resin to facilitate the flow and ejection of the molded part. In suggesting the use of asphalt or other petroleum materials either alone or as extend-

ers for more expensive resins, the point should not be over emphasized. This is especially true in manufactured items where the material cost, even when excessive, seldom is the major contributor to the final cost of the item. Where expense can be cut by molding as is the case in most paper-plastic products, resin cost probably is not important. However, in tonnage applications such as is required in house manufacture, the cost factor would be of prime importance.

### Conclusions

The appearance of paper-plastic products on the market has steadily increased over the last decade. In the past the outlet has been restricted mainly to electrical and decorative laminates, although many paper filled moldings have appeared on the industrial scene. Most of these were not products in themselves, but were later assembled together with other components to form a product.

The larger use of paper as a filter for plastic laminates and moldings is largely dependent upon the design of products which in themselves consist primarily of paper and plastic, rather than in the manufacture of smaller components. The paper industry should look to housing and household equipment, railroad cars, boats and similar products which potentially consume a large tonnage of paper and pulp products. Filtration preforms offer at least one approach to "modern" design as found in cupboard and cabinets which consist of large inter-related and complex radii and curvatures faired into flat tops and sides.

One of the most important problems facing the paper industry is that of developing resins from lignin and other waste products now discharged or burned. These should be suitable for recombining with paper and pulp to produce products having desirable strength and handling characteristics, especially suitable impact strength. The petroleum industry should not be overlooked as a source of inexpensive resins.

Finally, the paper industry can best approach the problem through specific products. The decision as to small volume specialized engineering materials and applications or the large volume general utility outlet is important and should receive most careful consideration. The path of the former is clear cut. The latter course will require specific development in terms of the particular products chosen for manufacture and in general fits the volume requirements of the paper industry more closely.

### Rayonier Moves Principal Offices to New York

● The principal offices of Rayonier Incorporated, manufacturers of dissolving pulps, bleached paper pulps and fine papers at Washington state and Florida plants, has moved its principal offices from 343 Sansome St., San Francisco, to 122 East 42nd St., New York City.

The purpose of this move is to increase management efficiency and to establish closer relations with rayon manufacturers and other companies which use the products of the company.

Edward Bartsch, who became president of the company January 27, as reported in our last issue, is planning another trip to Seattle offices of the company and Olympic peninsula mills in the latter part of March.

### U. S. May Purchase Crown Zellerbach Timber

● Property owned by Crown Zellerbach Corporation consisting of 2500 acres in the Larch mountain area, Oregon, may be purchased or condemned by the federal government, and used for a recreation project by the forest service, as proposed in a bill introduced in Congress recently by Representative Homer D. Angell, says City Commissioner Dorothy McCullough Lee of Portland. Mrs. Lee wishes the government to buy the land, rather than have the forest service acquire it by trading Crown Zellerbach some \$250,000 worth of timber in the Bull Run watershed. The latter proposal is opposed by the Portland water bureau, as the city does not wish to permit logging adjacent to the watershed.

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## Oregon Pulp & Paper Company Builds Army Tugboat Cabins



ONE OF THE ARMY'S FLEET OF TUGBOATS for which the Oregon Pulp & Paper Company at Salem, Ore., built the cabin and wheelhouse units. This is an unusual type of war work done by a Pacific Coast pulp and paper mill.

● Showing how far the pulp and paper industry has gone in its war effort, Oregon Pulp and Paper Company, Salem, Ore., is not only utilizing its machine shop in war work, but its lumber division has completed a contract for completion of a large number of superstructures for a fleet of tugboats, built under specifications of the Army Transport Corps at the C. D. Johnson Lumber Corporation sawmill at Toledo, Ore. The superstructures, built on sub-contract by the pulp and paper mill,

consisted of a complete unit of cabin and pilot house combined, and were built of Oregon fir, with eastern oak window and door frames and doors. Brass fittings were supplied by an Oswego foundry.

After a superstructure was finished it was loaded aboard a truck and hauled the seventy-odd miles from Salem to Toledo for delivery to the sawmill. There it was handled by crane and set in place on the boat. The boats built on an assembly line in one of the D. C. Johnson Lumber

Corporation sheds, are 96 x 740 feet. The boats were moved along from place to place for the various construction operations on logging railroad trucks. They were then moved out and set upon ways from which the boats were launched for a water test, and afterward hoisted bodily by a logging woods crane to cradles set upon flat cars, where the superstructures were transferred aft for easier shipping, after which everything was lashed for final delivery to the Army at unnamed destinations.

### Two Months' Job

● Edgar A. Linden, lumber division manager of the Oregon Pulp and Paper company, set a crew of ten cabinet makers on the superstructures, all of which occupied about two months. Men employed on the cabin and wheelhouse job were: E. F. Arneson, foreman; Cliff Robertson, Joe Moorman, R. E. Thompson, J. L. Wagner, Leo W. Estey, William B. Anderson, John L. Sours, Arthur Hagen, and Arthur Zilz.

At the completion of the job, the men returned to a navy contract which has kept them engaged much of the past year. According to Superintendent Leslie O. Wyman, only about three per cent of the business done today at the mill on the Salem "waterfront" is normal; the remainder of the jobs undertaken by the 140 employees are related to the war.

"The tugboat cabin and wheelhouse units are just part of it; we hadn't planned to build them but we could and we did," said Mr. Wyman.

Thus Oregon Pulp and Paper company chalked up a new category in utilization of existing equipment for forwarding the war effort.

## Aircraft Transparent Enclosures Made With Wood Pulp Base Plastics

● It is well known that wood pulp, molded with glue under pressure, produces parts for aircraft as strong as metal. This is being done in plants in Detroit, St. Louis and other cities. It is generally expected that use of wood pulp in this fashion will increase as refinements are made in manufacturing methods.

It is not so well known, however, that the transparent enclosures for airplanes may also be made from a wood pulp base plastics. The cellulose plastics, which are made from either cotton linters or wood pulp, are successfully used in the manufacture of these transparent parts for planes.

These parts include transparent noses, cockpit enclosures, bombardier's windows, cabin windows, rear gunner's windows, camera windows, tail light, wing tip light, landing light, and identification light enclosures, turret covers and door windows.

Relative properties of five types of plastics and plate glass use (which is too heavy and not easily contoured for transparent enclosures) are shown in the following table (the three cellulose plastics are made from wood pulp to a certain extent):

Property	Methyl methacrylate	Allyl resin	Cellulose acetate	Ethyl cellulose <sup>1</sup>	Cellulose nitrate	Plate glass
Tensile strength, p.s.i.	5000-7500	6000	4000-11,000	7000-9000	600-9000	6500-30,000
Compressive strength, p.s.i.	10,000-15,000	11,000	4000-30,000	10,000-12,000	20,000-30,000	36,000
Light transmission, per cent.	90-92	82-91	85-92	91	90 <sup>2</sup>	88-91
Specific gravity	1.18-1.20	1.32	1.27-1.37	1.08-1.18	1.33-1.60	2.5
Burning rate, 1/8-in. sheet, in./min.	1.1	0.35	1.5-2.0 <sup>2</sup>	Slow	Highly inflammable	None
Effect of age	Practically none	Slight Yellowing	Slight shrinkage	Slight	Hardens slightly	None
Effect of sunlight	Practically none		Slight discoloration	Slight	Yellowing and embrittles	None

<sup>1</sup>Up to 0.020-in. sheet only.

<sup>2</sup>Due to slight fogging of the exposed surfaces this figure decreases with exposure.

<sup>3</sup>0.060-in. sheet.

## Committee Reports On Newsprint Weight Reduction

Reduction in the standard weight of newsprint paper from 32 to 30 pounds a ream would cause a reduction of the total supply of paper in inequities between publishers, according to a special report issued by the Newsprint Association of Canada.

The committee in its report states that a considerable part of Canadian capacity is not available for present newsprint production due to the lack of wood or lack of power, or because machines are making other essential products.

The committee considers three possibilities, as follows:

1. An over-all change to 30-pound weight which all customers would receive regardless of preference. This would result in loss of 9.4 per cent in tons and 3.4 per cent in yards. The present Canadian commitment of 200,000 tons a month would have to be reduced accordingly.

2. Production of both 32 and 30-pound paper, arranged by government direction to yield maximum yards instead of tons. This would result in a small loss in tons and a gain of 0.56 per cent in yards. Consumers could not be certain as to which weight they would receive.

3. Production of both 32 and 30-pound paper according to varying arrangements between mills and customers and without government direction.

This seems to be the result that would most easily develop, but it would result in a loss both in tons and in yards. For this reason there could be no firm commitment as to Canadian supply and no certainty in monthly allocations.

In terms of total supply the general result, declares the committee, would be a loss of both tons and yards, with higher prices per ton and with inferior quality of newsprint.

## Price Ceilings Revised

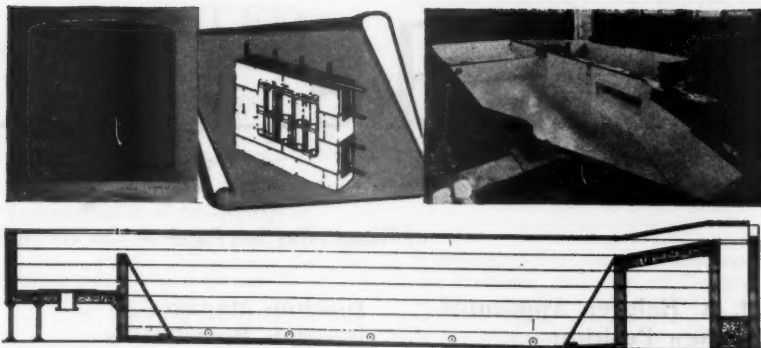
Timber Controller A. H. Williamson has announced a revision of woodpulp price ceilings affecting some of the eastern provinces of Canada. The new prices, effective as from February 3, represent an increase of about 5 per cent over those set previously for the three provinces affected—Quebec, New Brunswick and Nova Scotia. They apply to rough and peeled spruce and jackpine produced from the stump.

Price for rough and peeled poplar are increased "more substantially" as this species of wood has carried an uneconomic price and now is brought into line with prices prevailing on other types of wood.

This action, according to Williamson, is part of a joint move by the OPA and the Prices Board in Ottawa to narrow the spread between domestic prices ceilings and prevailing export prices on pulpwood, and to increase the over-all production of pulpwood in Canada.

## Capt. Crout In India

Word comes from India that Captain Glen Crout, United States Army, and formerly shipping foreman for the Puget Sound Pulp & Timber Co., is now stationed out there. Until November, Captain Crout had been located in the Puget Sound area, where he was associated with the Army's traffic department. Mrs. Crout, who is a registered nurse, is now located at Renton, Washington.



## Post-war LININGS FOR PAPER MILLS

Save-all tanks, couch pits, storage tanks, etc. must provide long-time trouble-free operation to permit mills to operate successfully under post-war conditions.

The linings must be correctly designed and made of materials selected to meet the mills individual operating conditions.

For sixty years, Stebbins have worked closely with pulp and paper

mill operators in designing, installing and servicing linings and tile tanks.

No other organization has devoted sixty years exclusively to lining and tile tank problems and no substitute has yet been found for experience.

Every installation is covered by a lump sum contract. When a lining or tile tank job comes up, consult Stebbins.

## Stebbins Engineering Corporation

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## Alumni of Chalmers Institute Have Reunion In New York

● Four alumni of Chalmers Technical Institute in Goteborg, Sweden, had another reunion at the TAPPI sessions recently in New York. They are Ivar Ekholm, assistant domestic sales manager of National Aniline Div., Allied Chemical & Dye Corp., New York; Gunnar Nicholson, resident manager, Union Bag & Paper Corp., Savannah, Ga.; Karl M. Thorsen, manager, Chesapeake-Camp Corp., Franklin, Va., and Emil Creutz, vice president, American Heat Reclaiming Corp., New York.

Another graduate of Chalmers is N. W. Coster, technical director, Soundview Pulp Co., Everett, Wash., and he had a get-together with the others at a TAPPI meeting a few years ago. Mr. Nicholson is in line to become the president of TAPPI a year hence.

## Woodfibre May Resume Operations

Because of a continuing scarcity of logs, the Woodfibre mill of B. C. Pulp & Paper Company on Howe Sound was shut down in mid-February. Plans were being made to have the mill resume operation early in March.

The company's Port Alice mill, producing bleached sulphite products, largely for the war program, has been running steadily, although at reduced capacity. The new Holberg logging camp has been of considerable assistance in maintaining the supply of logs at that plant.

## Spaulding Increase Approved

Spaulding Pulp and Paper Company, Newberg, Oregon, received notification March 2 of approval by the 12th Regional War Labor Board for a general increase of 5 cents per hour on all job rates at the mill. Employees affected total 140. The hiring differential of 2½ cents an hour during the first six months period and probationary rates previously paid during the first six months to women who had taken over jobs which were formerly held by men, were also eliminated.

Employment during 1500 hours prior to June 1 was substituted as a vacation provision to supplant the older plan of a year's continuous employment before June 1 for vacation eligibility.

According to the Board, the award was made so the approved items would bring rates up to those paid employees of other Pacific coast paper manufactures, as recently approved for all members of The Pacific Coast Association of Pulp and Paper Manufacturers.

## Hercules Co. Appointments

● Reginald Rockwell became assistant general manager of the Papermakers Chemical Department, Hercules Powder Co., Wilmington, Del., on February 15. He was formerly manager of the TNT plant at Chattanooga, Tenn., and before that, manager of the Brunswick, Ga., naval stores plant.

Milton M. Bixby on the same date became director of sales of the PMC department. He had been former eastern sales manager for the department.



# Trade Talk



of Those Who Sell Paper in the Western States

## D. A. Halgren Appointed To New Position

O. W. Mielke, general manager of Blake, Moffitt & Towne, has announced the appointment of D. A. Halgren to the position of sales manager, Wrapping Paper Department, Seattle Division. Experienced in the field of wholesale selling, Halgren came to Blake, Moffitt & Towne in 1930.

The appointment is actually the creation of a new position demanded by greatly increased business activity and detail resulting from expanded operations and growth in the Seattle area. All sales were formerly under the supervision of Frank A. Carson who will now concentrate his efforts on the Printing Paper Department of which he is sales manager. In addition, he will continue to act in a supervisory capacity in all purchasing.

## Camas Mill Visited

A group consisting of 30 men in uniform and 10 civilians from Oregon State College spent the afternoon of February 26, in an examination of the Crown Zellerbach mill, Camas, Wash. The group, in charge of M. A. Huggins, included the mill in a tour of industrial plants such as Bonneville, Troutdale, and Swan Island.

The members of the party are affiliated with the American Institute of Electrical Engineers.

## Kirkland Vice President Of Carpenter

A. G. Kirkland has been elected vice-president of the Carpenter Paper Company in charge of that firm's Pacific Coast activities, and B. E. McJilton, formerly assistant to the president, has been appointed manager of the San Francisco division.

Mr. McJilton succeeds C. H. Beckwith, for many years a San Francisco paper man, who will join the company's general office staff at Omaha, Neb.

## Ostensen Takes Business Trip

Gus Ostensen, paper mill superintendent of the Crown Zellerbach Camas mill, spent February 8 to 13 in San Francisco, California, on business.

## Jaggard Vacations

B. P. Jaggard, San Francisco, sales representative, Hammermill Paper Co. and Grays Harbor Pulp and Paper Co., accompanied by Mrs. Jaggard enjoyed a mid-winter vacation at Palm Springs last month.

## Barber On Eastern Trip

William E. Barber, director of Crown Zellerbach central technical department, Camas, Washington, left March 10th for an extended trip to the east coast.

## Joachim Manages Iroquois Board Mills

● A & P Corrugated Box Corporation of Lowell, Mass., and Gibraltar Corrugated Paper Company, Inc., of North Bergen, N. J., have formed Iroquois Board Mills, Inc. This corporation will operate the paper mill at Thomson, N. Y., formerly owned by A & P Corrugated Box Corporation and operated at the Iroquois Mill Division.

The new corporation was organized under laws of the State of New York as of February 1.

H. L. Joachim, formerly of Los Angeles, who has operated the Iroquois Mill since its acquisition by A & P last year, continues as vice president and general manager of the new corporation.

## Tim Sullivan Dies

Friends of the late Cornelius "Tim" Sullivan, long time printing paper salesman with the Los Angeles division, Zellerbach Paper Company, will be grieved to hear of his death last month.

## Lt. Jermann Injured

Lieut. J. B. (Ben) Jermann, formerly a crane and laminator operator at Crown Zellerbach, Camas, Washington, mill, until called to duty, September 16, 1940, was seriously injured when his plane crashed in the Mediterranean area sometime in December. A letter he wrote to his uncle, Vern Anderson, Clark County OCD coordinator, reveals that he is in a Canadian hospital with fractures of the back, skull, and both knees. He anticipated transfer soon to an American hospital.

Lieut. Jermann, born in Camas, went to work for the Crown Zellerbach mill in March, 1936. His father and mother, Mr. and Mrs. J. P. Jermann, now residents of Gorlin, Washington, are likewise former employees, and an uncle is now employed there.

In 1940, Jermann was called to active duty with the 148th field artillery, Oregon National Guard. He was later transferred to the air corps for training as a flying cadet, and received his pilot's commission.

## Siebers Returns to Great Lakes

Gordon Siebers, son of Tony Siebers, Longview Fibre Paper Mill superintendent, has just returned to the Great Lakes Naval Training Station to finish training. Siebers came to Longview for a six day leave but contracted an ailment which necessitated a stay in a Portland hospital and a lengthy recuperating period. He remained in Longview about six weeks. Young Siebers has worked for Longview Fibre during summer vacations.

## Vernig Visits Longview

G. (Pete) Vernig, Lieutenant (senior grade) in the U. S. navy, and a former employe of Weyerhaeuser Timber Company, Pulp Division, Longview, Washington, paid the plant a visit during the last week in February. He has been on duty in the South Pacific.

## H. L. Zellerbach and Wilkin Home From Convention

H. L. Zellerbach, president, Zellerbach Paper Company, San Francisco, and his assistant, King Wilkin, are back at their desks after having attended the National Paper Trade Association convention in New York. Also attending were V. E. Hecht, vice-president and Philo K. Holland, manager, Los Angeles division.

## Death of F. J. Field Reported

Hope for the safety of F. J. Field, formerly of the Phoenix division, Zellerbach Paper Company, was given up when he was declared legally dead by the War Department. Field, who was in the Army, was reported missing in action a year ago somewhere in the Mediterranean area.



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### Settlement Reached

Several leading Canadian pulp and paper companies are reported to have reached a settlement with the Hearst organizations on the longstanding debts to them of the Hearst newspapers.

Hearst has owed an estimated amount of \$8,500,000 to various Canadian companies, and with recent improvement in Hearst's fortunes efforts have been made to clear up this debt.

After several feelers, the Hearst organization late last summer made a definite proposal to various Canadian creditors, seeking individual rather than blanket settlements and suggesting settlement in one of two ways: (1) Acceptance by the companies of a cash payment of 50 cents on the dollar plus a long-term newsprint contract, or (2) acceptance of 10-year 3 3/4 per cent notes. As previous security, the creditor newsprint companies had held notes receivable, of dubious value in the past and thus, in recent years, transferred by most companies from current assets to "deferred asset" classification.

Negotiations have been under way on that basis, and several of the companies have now agreed to settlement, along the lines proposed by Hearst, with certain stipulations as to details.

### Sgt. Henry Returns

Sgt. R. J. Henry, after more than a year's service in the South Pacific area, and likewise a veteran of the World War with 22 months service, was recently transferred at San Francisco to the enlisted reserve corps. He served with the amphibian engineers overseas from January 7, 1943, until his return immediately prior to transfer.

Sgt. Henry, an employe of the bag shipping department of Crown Willamette division of Crown Zellerbach Corporation, Camas, Washington, until his reenlistment in July, 1942, will return to work at the mill after a visit with his mother in Rochester, Minnesota.

Reaching the age limit for active duty of 50 years accounts for Henry being mustered out.

### Du Pont Ad Manager In Navy

F. Lyman Dewey, advertising manager, E. I. du Pont de Nemours & Co., Dye-stuffs Division, recently joined the U. S. Navy and is a lieutenant junior grade in the supply division, naval aviation, Philadelphia.

### Simeral Ill

R. W. Simeral, vice-president and general manager of Fir-Tex Insulating Board company, St. Helens, Oregon, has been in a Portland hospital in serious condition from a heart ailment.

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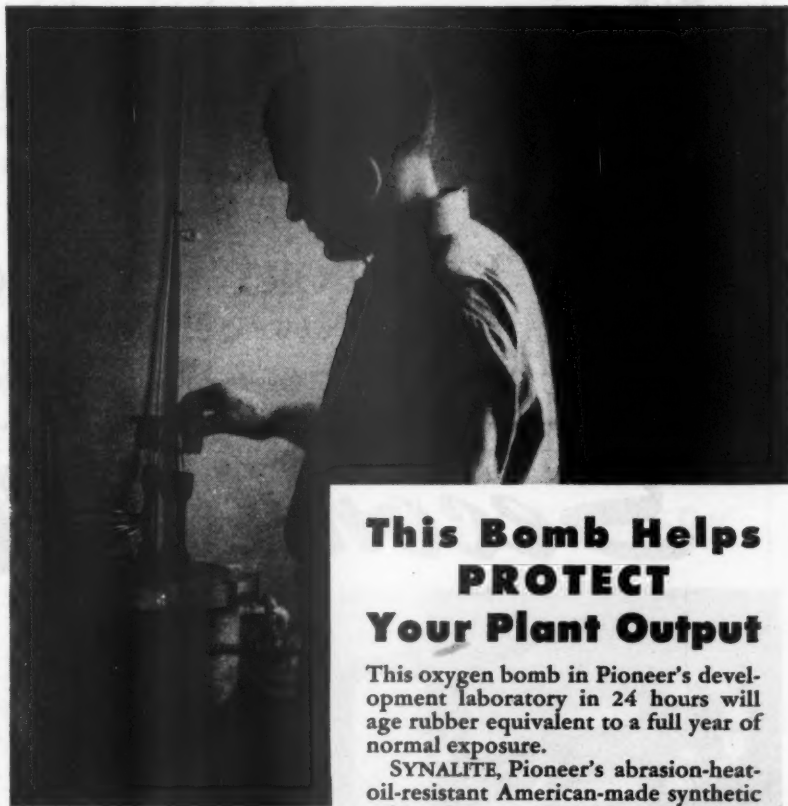
Reply Box 4, Pacific Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

### Johnston a Grandfather

R. S. Johnston, sales manager, Pusey & Jones Corp., Wilmington, Del., became a grandfather February 28. A son was born to First Lieut. R. Barkley Johnston, U. S. Army Air Force, and his wife, who is living in Montebello, Calif. Mr. Johnston's son is a pilot in air transport command in India.

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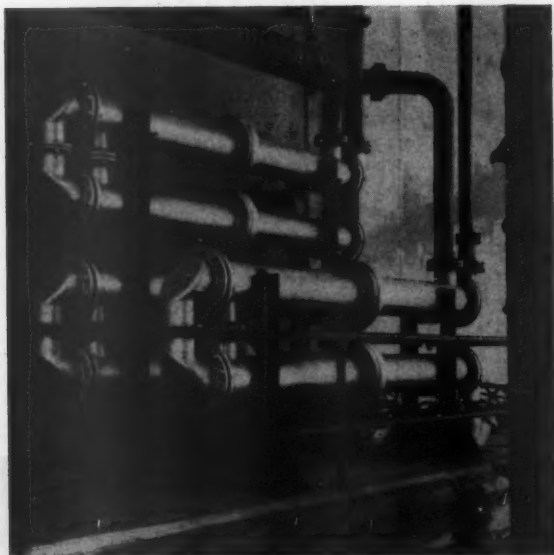
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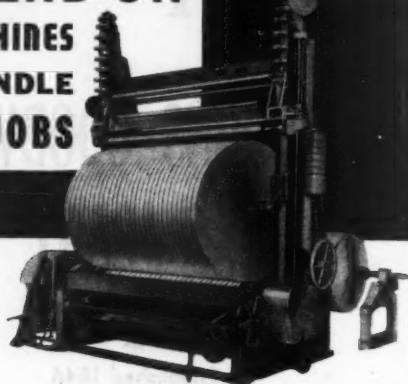
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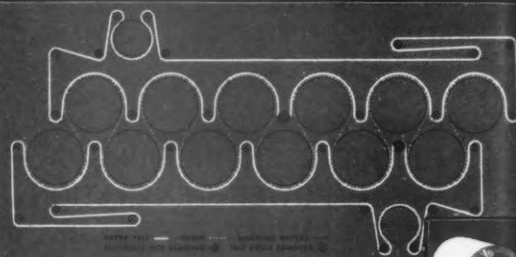
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